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Journal of Phi Delta Kappa, Professional Fraternity for Men in Education

For the promotion and improvement of free public education through a continuing interpretation of the ideals of research, service, and leadership

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Midwest Kaleidoscope

YOUR EDITOR spent the last week of August and all of September running an interesting errand for Phi Delta Kappa, an errand apart from and entirely incompatible with his regular duties. So if this issue appears to be frayed at the edges, editorially speaking, and rather meagre so far as size is concerned, please remember that for a period of a month or more magazine matters lay untouched, and let your criticisms be not only just, but merciful.

Our authors have done their usual sturdy best, and this plea is not an apology for content, but simply an explanation for such proofreading and other mechanical errors as may have crept in. (We may have lost, here and there, an engagement in the battle of the commas!) It may take another month for us to regroup and recover, after which we hope to report that the "situation is normal," including the time and opportunity to make further changes and improvements in both content and format.

The errand referred to took us into 20 midwestern communities, ranging in size from a city of 5,000,000 to a village of 800, all situated in that great heart of America, the Ohio, Missouri and Mississippi valleys. And, in spite of the heat of the worst drought in 75 years plaguing especially the southern and southwestern portions of the area traversed, it was an inspiring experience to "survey" these communities, particularly since each of them is the site of educational enterprises of importance, some of them indeed of great magnitude and influence.

Unfortunately, most of the survey was made during vacation, with few opportunities to meet education faculties or to observe student bodies. However, we recall the good-looking, healthy, cheerful appearing students at a teachers college, young men and women with "not a complex in a carload." We trod with pleasure, also, the paths of our graduate alma mater, and watched today's students enroll in the same spot, and in much the same manner as had we more than a generation ago. These students, of undoubted mental qualifications, also appear to have personalities commensurate with their abilities and their opportunities for learning. We can confidently expect great things from them.

In those few instances where education faculty members were met, the range of interests represented, even by specialists, was noticeable, and this breadth of interest, it seems to us, augurs well for the training of future teachers as they sit at the feet of these masters.

We like also the implications of the remark, in one community, "Our citizens have always done well by our schools," and the equally revealing comment, "We build our schools in the weeds." Who would say which is cause and which effect? We like to recall the ingenuity of certain alumni in circumventing legal barriers to fast action by the organization of an endowment association to handle the real estate needs of their university. Perhaps the rags-to-riches story of the rich widow who gave the association 25,000 acres of wheat land on which, inevitably, oil was later discovered, with consequent annual income to the association of nearly $100,000, acts as a spur. (Nearly everyone can be ingenious on $100,000.)

We like to remember, also, the gleam of prophecy in the eyes of a responsible man, business manager of a teachers college, in fact, as he described the future of the rolling hills of the north slope of the Ozarks, calling it another TVA in the making. The fact that this region was seriously considered for the location of an atomic energy plant now building in the Ohio River Valley, lends credence to his vision. We like the story of the poor boy coming to the same institution, "the poorest boy who ever came here," to quote the same business manager, who sold newspapers to support himself and his wife while a student, and now become the leading realtor and the postmaster of this thriving city of undoubted future growth. We like, also, the story of this same community being surveyed, much as we were doing, but by an expert, who, finding no one, from bootblack and waitress to business executive, to say anything but good of the community, decided that here was the spot for a business development now becoming a major factor in the local economy.

We could go on. In every case, such incidents and developments were tied in closely with education and educational institutions, further proof of the fact that education is business, big business. It is both inspiring and satisfying to have a part in it. In our vocabulary, discouragement has no place. Neither should it find lodging in the mind of any educator who has any concept whatever of the educational progress now being made, at least in the Midwest.—L. A.

S-R BONDS

Let's Hope Vision Remains

Alpha Pi Field Chapter has directed me to convey our appreciation of the fine work...of PHI DELTA KAPPAN. At the last scheduled meeting of our group the members present were unanimous in their agreement that the publication has improved tremendously. We certainly extend our best wishes to you for continued and long success in the endeavor. — Ogden L. Glasow, Secretary-Treasurer.

Allow a "*dour* schoolmaster" to congratulate you on an outstanding job. The layout, both cover and interior, is fresh and pleasing to the eye. Of even greater importance to me is the *quality* of the articles to be found between the "face-lifted" covers of our staid periodical. I hope you intend to keep the issues topical, for these add an organization to PHI DELTA KAPPAN rarely found in its recent past. — Herbert C. Rudman, President, Pi Chapter.

May I congratulate you on the new format of the KAPPAN? I think it looks swell and I liked your introduction of Mistress Caledonia. — Cal Gross, Chairman, Commission on Keeping Public Education Free.

The October issue of PHI DELTA KAPPAN speaks most eloquently, through both content and format,... Congratulations! — John B. Stout (Zeta 545).

I like the new PHI DELTA KAPPAN. It is good looking and it has good material. — R. A. McLemore (Gamma Gamma 34).

I surely like the October PHI DELTA KAPPAN. It's a good job. — Edwin A. Swanson, Secretary, Alpha Omega Field Chapter.

I just want to add another compliment to you and Paul on the Issue on Research. Although I read it in the proof I have found it attractive enough in final form to read it again. — Wm. P. McLure, Chairman, Commission on Research.

I'm very well pleased with your new type and cover of this year's PHI DELTA KAPPAN. The articles are enlightening and in every respect I'm pleased. — Royce H. Stephenson (Alpha Alpha 852).

Didn't Intend to Disturb Sleep

After reading your editorial I jumped out of bed in my pajamas and sat down and wrote the enclosed. — Louis J. Henrich (Pi 23 and Alpha Field).

'Twas *Not* the Humidity

The same blaze[1] which prompts you to mention typography brings me to approve...because *CTA Journal* has used Caledonia dress for some two years. But you have done *more* than dress your book; it's systematic, readable, controversial. You have made some changes... all contributing to an improved KAPPAN! — Wilson McKenney, Editor.

There *Must* Be More

The changes in paper and typography are all to the good. Even teachers of foreign languages may be interested in type faces and sizes and in aesthetic fancies, so thank you for the pleasingly whimsical editorial introduction and the technical description. I especially like "Keeping Abreast" and the "S-R Bonds." There has been improvement in the content of the KAPPAN; there could be more — no doubt will be. Some day I may get around to specifying what I mean. Meanwhile, I find it much more interesting than I used to. — Thos. A. FitzGerald (Pi 118, originally Gamma 91).

Need Help on "Special" Issues

A short line to express my personal congratulations on the "new look" of the PHI DELTA KAPPAN, especially Caledonia, etc....It is a welcome and delightful step. Was glad to see the "pointed" approach to material as exemplified in the October issue. Do hope we can anticipate similar quality editions in the future. No blarney — it's a fine issue! — Wm. J. Walsh (Beta Delta 599).

These Liked The June Issue

All the comment I have heard about the issue has been most favorable. — Calvin E. Gross (Iota 794).

I believe the June issue deserves all kinds of honest superlatives. Especially, the introductory resumé by Hollis O. Moore is without equal in compactness, comprehensiveness, and incisiveness. — Joseph Seidlin (Alpha Phi 225).

I have just read the June issue and want to congratulate you on a tremendous achievement. This is the best issue of the PHI DELTA KAPPAN I have yet read. I plan to use it as a major reference in a course I'm giving this summer in Current Educational Thought. It bears careful study and whoever gives it this study will be greatly rewarded. You have done the organization and the cause of education itself a great service. — Eugene E. Seubert (Beta Iota 13).

Belatedly, Mr. Prakken and myself wish to offer you congratulations on your special issue on "Promotion and Interpretation of Free Public Education." We think you and the Commission have done an excellent job. Several articles in the issue were considered for condensation in *The Education Digest*. We finally selected "Education and the National Economy" by Newton Edwards, and it will appear in either the September or October issue. — Jerome C. Patterson, Managing Editor.

I have enjoyed reading the PHI DELTA KAPPAN this year under your editorship, and I particularly liked the special issue which should be useful to a lot of people. — Rolfe Lanier Hunt (Beta Gamma 314).

I consider it a rare privilege to be counted among the brilliant array of authors and contributors you have so expertly assembled for this issue. Apart from the back cover it is truly distinctive and a commendable testimony to your good work. — Francis L. Bacon (Alpha Chi 708).

[1] Blaze: Also connoting heat, i.e., fever, therefore warm approval. How distorted can I make it? — W. M.

A Philosophy for Our Times

Quantitative expansion may be a doubtful good. We can build more automobiles, more refrigerators, more television sets, and, politically, our power may increase all over the world, yet these accomplishments may be insignificant. For a great material civilization is never an end in itself, it is only a prelude to the life of reason. *The realm of matter thus is the overture to the realm of spirit.*

By FREDERICK MAYER*

WE ARE LIVING in an age of technicians. The advance of scientific machinery has been so great that we tend to be more concerned with application than with theory, with practical issues rather than with long-range ideals. Some thinkers believe that philosophy in such an age is only a footnote to futility. Yet the danger exists that we may be so seduced by methodology that, as Santayana said, we may redouble our efforts because we have lost our aims.

I. PHILOSOPHY: A PERSONAL MATTER

A sober view of history should convince even the most enthusiastic proponents of materialism that power has within itself the seeds of its own destruction. Did not Lord Acton say that power corrupts and absolute power corrupts absolutely? The great saints of mankind from Jesus to Schweitzer have taught us that real power is inward, not external, qualitative, not quantitative. The great educators from Socrates to Whitehead have shown that the greatest adventure of man lies not in the political or economic realm but in the realm of *ideas.*

The great need of our time then is for a creative view of man yet, according to Scheler:

"In no other period of human knowledge has man ever become more problematic to himself than in our own days. We have a scientific, a philosophical, and a theological anthropology that know nothing of each other. Therefore we no longer possess any clear and consistent idea of man. The evergrowing multiplicity of the particular sciences that are engaged in the study of men has much more confused and obscured than elucidated our concept of man."[1]

We need philosophy, not so much as a technical study, but as an aid to illuminate the problem of man, to give meaning and coherence in an age in which change and flux reign supreme.

Without a creative philosophy we will be like Harry Street in Hemingway's masterful short story *The Snows of Kilimanjaro.* All his life Harry Street had tried to become an outstanding writer. He had tried a life of excitement and adventure, he had seen wars and revolutions. He had married a wealthy woman, who could give him material security. But he was unhappy, for he felt that he had sold his soul and that he had missed the most important climax in life: creativity. Now he was dying in Africa. Now he felt he really had the ability to write, to describe the fundamental emotions of life. As he felt the unyielding touch of death, he knew it was too late. He had lived the unexamined way of life, and he had to pay.

Like Harry Street we all have to make significant choices. Philosophy and education aid us in making our choices more intelligently and more rationally, to see the consequences of our actions. We have to decide: What type of person will we be? What will be our vocation? What will be our values we shall stress most? And what shall be our central purpose?

In the *Upanishads* we read that most individuals are guided by the veil of unreality, the veil of Maya; they mistake appearance for reality, illusion for truth, and change for permanence. This means a life of desperation and futility, guided by the passions of the moment. The wise man, according to the *Upanishads,* will stress the essential self, the *Atman* which is beyond space and time, and which is part of the unitary structure of the universe.

* Frederick Mayer is Professor of Philosophy and Religion, University of Redlands, Redlands, Calif. This article is slightly condensed from Chapter I of Dr. Mayer's forthcoming book, *Education for Survival,* to be published in 1954.

[1] Max Scheler, *Die Stellung des Menschen im Kosmos,* pp. 13ff.

This view may lead to a rather static concept of the self; like the universe, the ultimate nature of the self remains a mystery. And, as Kant indicated in *The Critique of Pure Reason*, fundamental paradoxes—paralogisms—result when we try to define the essence of selfhood. The self, just as society, is in a state of change. But man has awareness of awareness. He is conscious of the change within and without, subjectively and objectively, and through philosophy and education he can frame tentative goals and objectives towards which all change can be directed.

Philosophy thus is an intensely *personal* matter. It begins with a sense of alienation. If we lived in a perfect utopia, few of us would be philosophically minded. But since we life in an imperfect society and a world in which death plays a prominent role, we feel the chasm between ideal and actuality, hope and realization, expectancy and fulfillment. The anticlimactic and tragically incomplete nature of life lead to philosophic wonder. We live in a dual world: the world of experience, of our senses, the realm of immediacy, and the world of our dreams and hopes, the realm of ideals. Can the two worlds ever meet?

No Achievement Is Final

Some philosophers like Plato establish a sharp contrast between experience and ideas. Some religious thinkers like Augustine speak even of two cities: The City of God and the City of Man; both are involved in a constant state of conflict and warfare. Other thinkers like James, Dewey, and Kilpatrick see the unitary aspects of life and avoid the dualism of experience and the transcendental realm. To them ideals are not patterns of absolute perfection but goals and objectives implicit in action.

Still our philosophic pilgrimage begins with a recognition of contrast. Wherever we look we see an enormous distance between utopia and actuality. Permanence is dissolved in the stream of time. As we read in the *Rubaiyat:*

Oh, threats of Hell and Hopes of Paradise!
One thing is certain—*this* life flies;
One thing is certain and the rest is lies;
The flower that once has blown forever dies.[2]

Does this not create skepticism? Does this not lead to a mood of futility? We read on in the *Rubaiyat:*

"The Revelations of Devout and Learn'd
Who rose before us, and as Prophets burn'd,
Are all but Stories, which, awoke from Sleep
They told their comrades, and to Sleep return'd.

I sent my Soul through the Invisible,
Some letter of that After-life to spell:
And by my Soul return'd to me,
And answer'd 'I Myself am Heav'n and Hell':

Heav'n but the Vision of fulfill'd Desire,
And Hell the Shadow from a Soul on fire,
Cast on the Darkness into which Ourselves,
So late emerged from, shall so soon expire.

We are no other than a moving row
Of Magic Shadow-shapes that come and go
Round with the Sun-illumined Lantern held
In Midnight by the Master of the Show;

But helpless Pieces of the Game He plays
Upon this Chequer-board of Nights and Days;
Hither and thither moves, and checks, and slays,
And one by one back in the Closet lays.[3]

All this is not an invitation to cynicism; on the contrary; skepticism is a preliminary purge. It illuminates *false* hopes and expectations. Without a knowledge and an understanding of our limitations, we tend to lack, as Russell indicates, a sense of cosmic piety. We set up our own self as the standard of reality and as the ultimate value.

To recognize our limitation should not lead us to despair and anguish. To be sure, as Pascal shows, man is suspended between the infinite and the infinitesimal; he is constantly threatened by nothingness. As we become philosophically aware, we realize that no achievement is final, no triumph absolute, no glory complete, no victory everlasting. We recognize the profound insight of campus philosophy, especially in *The Plague and the Stranger.* Are we not all condemned to perish? Are we not all like prisoners awaiting final execution?

This is only one side of the story. By the use of intelligence and education we overcome the limitations of mortality, we participate in a process which goes beyond immediacy. We feel the comradeship of millions of others who are fellow pilgrims seeking for truth and enlightment. We are inspired by a power which transcends our own individuality. We begin to realize that man is the measure of things and that he can control the world both within and without. Did not Bacon say that knowledge is power? Has not the progress of modern science substantiated the faith of Bacon?

Still we must not go to the extreme of foolish optimism. We have been much more successful in the control of nature than in the understanding of the self. *Our technology dwarfs our ideas.* We are proud to drive the latest model car, but many of our ideas go back to the beginning of civilization. We are proud of novelty in technology and

[2] *Rubaiyat,* LXIII.

[3] *Ibid.,* LXV-LXIX.

ashamed of novelty in our thinking. We exist simultaneously in the twentieth century A.D. and in the twentieth century B.C. Our machines are part of the present, but in our ideas we are often conscientious objectors to the present.

We are only too conscious that civilization produces enormous neuroses. One of the most illuminating books by Freud deals with the topic of *Civilization and Its Discontents*. The struggle between our emotional drives and the restraints of civilization has been reinforced in our own time. Entire nations like Germany under Hitler and Italy under Mussolini have deserted the pathways of civilization and have returned to the jungle of extreme nationalism, bellicose imperialism and irrational authoritarianism. We should realize that if we look upon history under the aspect of astronomy we are only a few seconds away from the jungle.

A mature view of philosophy thus sees the precarious nature of life. Irrationality has a thousand different manifestations; prejudice exists in myriad forms. *Often education is only a rationalization for our animal faith.* Often education only systematizes our biases; many times education is only a scientific superstructure built upon the swampland of superstition.

Philosophy and education thus are tools of enlightenment. They indicate that man cannot live by absolutes; *that life is an exercise in uncertainty, that yesterday is not the criterion and standard for tomorrow.* We may want to escape to a timeless realm of perfection, but such an escape is impossible. Did not St. Francis already realize that salvation is a *social* matter? What good is individual perfection in an age of Hiroshimas and concentration camps?

A mature philosophy ought to have fruitful consequences; it ought to result in action. Contemplation for the sake of contemplation may be an intellectual form of narcissism for man is part of society, and the welfare of society determines to a great extent his own destiny.

Education is the practical test of our philosophic theories. In the educative process we see the consequences of our ideas and ideals. The schoolroom thus is the link between actuality and aspiration, hope and fulfillment.

II. PHILOSOPHY AND EDUCATION

Yet contemporary education often neglects philosophic ideals. Certain cults have developed which extol an irrational way of life. For example, there are those who favor activity for the sake of activity. They feel that just doing anything is a sign of educative growth. They feel that all subjects have the same value and thus they equate typing with poetry, and flower-arrangement with history, and basket-weaving with social studies. Other educators are so concerned with methodology that they neglect long-range goals. *They teach technique without vision, mechanical perfection without philosophic understanding.* Still other educators are overwhelmed by the importance of tests and measurements and, like the logical empiricists, they feel that what cannot be measured has no value and significance in education.

When Held in Moderate Spirit

All these viewpoints are valuable when held in a moderate spirit; when they become the ends and goals of education, they tend to give a one-sided foundation to the educative process.

Philosophy in education unifies the various fields and attempts to overcome the distance between the arts and the sciences, between values and facts. Philosophy not only criticizes our fundamental assumptions but gives coherence to the entire intellectual enterprise. Philosophy is interested not merely in the present but in the day after to-morrow. Philosophy thus has a certain utopian tendency; it points to the future, to the unrealized potentialities of mankind.

The influence of philosophers upon education must not be underestimated. We have only to think of the impact of Dewey, Kilpatrick, and Hutchins upon our own civilization. We are guided by a few fundamental ideas, by what Whitehead calls the climate of opinion. When ideas change, they represent a profound revolution, not only in the intellectual realm but also in the realm of society.

There are those who believe that sociological determinism is all important in history and life. For example, they would say that Dewey was so influential in twentieth century education because he represented the down-to-earth, pragmatic spirit of American industrialism and because his ideas were designed for mass education. Russell thus speaks of Dewey as the intellectual apostle of the philosophy of power, expressed in economic terms by American business. Such a view is rather superficial. The great philosopher may be a product of his times; subconsciously, his ideas may reflect the dominant currents of his culture, but his work redirects and redefines and perhaps reconstructs the aims of civilization and education. Dewey may have been the voice of the dynamic spirit of American civilization, at the same time his work and his influence led to a change in the *direction* of American civilization.

The great thinker gives *form* to change. His personality, his ideals, his beliefs become part of

history, and education is different and more profound because of his existence. An idea has a temporal and spatial history just like society; when an idea is applied creatively and constructively, it can change the course of history.

Let us take the idea of democracy as an example. Before Dewey, democracy in education implied merely a theoretical faith. The concept of democracy was negative. A certain amount of freedom was given to the teacher, but it was often denied to the student. W. T. Harris thus thought that discipline and effort should guide education.

Now Dewey in such works as *Democracy and Education, My Pedagogic Creed,* and *School and Society,* indicates that democracy is the essence of education. Just as democracy in politics stresses the sovereignty of the individual, so the schoolroom should stress the sovereignty of the student. Education becomes not a preparation for adult existence, but education is equated with life. Democracy ceases to be a statement of theoretical ideals and becomes a way of action and behaving. The idea of freedom expands through the self-expression of the student and through a more humane concept of teaching. The school ceases to be a mere intellectual center, it becomes a *community center.* In short, the great thinker like Dewey indicates the range of possibilities. He sees fundamental relationships and his ideals are applied in the classroom. Ultimately his faith leads to the *reconstruction* of education and philosophy.

III. INFLUENCE UPON HISTORY

In certain periods of history, sharp intellectual breaks can be detected. For example, medieval philosophy symbolized a pronounced difference in emphasis from classical thinking. Instead of a stress upon man, the emphasis was upon God. Philosophy became the prelude to theology. In the Renaissance this direction was reversed and instead humanism became the fundamental philosophy. Humanism, especially in Erasmus, Ramus, Montaigne, Rabelais, Colet, Ficino, Pico della, Mirandola, Vives, and Reuchlin, stressed the centrality of reason, the importance of this world, and neglected the Beyond.

The same difference in emphasis can be seen in the work of Peirce, James, and Dewey. With the development of Pragmatism absolutes cease to be the center of philosophy, instead relativism reigns supreme. Abstraction for the sake of abstraction is avoided; concreteness is prized, application is valued. Consequences determine the fruitfulness of philosophy. The philosopher-king leaves his ivory tower, he enters society and attempts to clarify social problems and social issues. He applies the scientific method—openmindedness, a tentative spirit, hypothetical solutions, and rigorous verification—to all areas of life.

Traditional philosophies are not overthrown; they just appear to be of *less consequence* to our generation. History is extremely generous when it comes to the obsolete. Side by side, we find the old and the new, the functional and the impractical, tradition and experimentation. Perhaps, as Santayana said, we do not refute our predecessors, we just bid them good-bye. Still we can be certain that we shall meet the old philosophies again, for the perennial issues of thought appear again and again in various disguises. Thus the conflict between Dewey and Hutchins reminds us of the struggle between the Eleatics who, like Hutchins, believed in permanence, and Heraclitus who, like Dewey, stressed change.

A Bridge for Tomorrow

This does not imply that novelty is an illusion. On the contrary, certain periods of history produce *qualitative* as well as quantitative changes. Still perennial problems remain with us like the problem of change and permanence, relativism and absolutism. A mature philosophy, it should be pointed out, will see both permanence and change. To view life only in Heraclitean or Bergsonian terms, to see only flux, may lead to instability and activism, it may create rootless human beings. On the other hand, to be a slave to permanence is to become fossilized, a serf to tradition, and an alien to our own time. The flow of time is irreversible; we cannot recover the past, we can only see it as an aspect of the present.

The type of philosophy we hold will determine, to a great extent, the educational system we support. Thus in Athens education was mainly in the hands of philosophers. The life of reason was extolled. The student was taught that contemplation was the goal of life and that scientific application was unworthy of a free man. In the Middle Ages the concept of *hierarchy* dominated both philosophy and education. In education it implied that only a few could be taught and that *faith* was more important than reason. In the Renaissance, as philosophy became more universal, as knowledge was expanded both in the literary and scientific realms, education included the middle class and had a more secular basis.

In the United States, with the development of a democratic philosophy of education, universal schooling became part of our national faith. Equal education opportunity became the goal towards which we strive. Education ceased to be

(Concluded on page 96)

Educational Science in Medical Teaching

What use has, or has not, been made of educational science (that is, the findings and the methods of professional education) in training programs in other professions? Actual methods and the general situation in medical education are carefully set forth in this article, the first of a series planned to cover several of the major professions. It is apparent that professional education has something to learn from, and to contribute to, medical education and training.

By RUSSELL MEYERS, M.D., F.A.C.S.*

IN BROAD TERMS, the influence of educational science on medical teaching in the United states may be summarized by quoting briefly from pertinent articles of relatively recent date:

"We have advanced rapidly in all phases of medicine but slowly in medical teaching. It is time to improve our medical teaching by applying scientifically proved education principles based on careful research."[43]

". . . for while the medical sciences have been rich and inviting fields for experimentation and research, medical education is still virgin terrain, waiting for equally meticulous inquiry into the art of effective teaching of its materials."[27]

". . . in the professional schools, the teaching staffs and the curriculum committees . . . consist in large part of technically qualified experts whose interest in and familiarity with the science of education as such is lamentably small."[33]

That this state of affairs prevails in the year 1953 may come as something of a surprise to the student of general education, particularly if he supposes *a priori* that the chief function of a teacher in a college of medicine must be that of teaching and that medical teachers must surely have acquired the general background of pedagogic theory and communication skills available in the warehouse of educational science. Such supposition is, unfortunately, not rooted in fact. To be sure, exceptional individuals can be found who feel it incumbent to acquaint themselves with the field of general education as well as with their special areas of interest in the basic medical and clinical sciences. They are, however, almost unbelievably small in number.

* Russell Meyers is Professor of Surgery and Chairman, Division of Neurosurgery, State University of Iowa, College of Medicine, Iowa City, Iowa.

I. THE MEDICAL TEACHER

Confronted for the first time with these disconcerting circumstances, the student of general education may feel constrained to ask, "What can be responsible for this state of affairs?" As might be supposed, no simple explanation is at hand. A satisfying account is more likely to be found cast in multi-causal than in unit factor terms.

For one thing, medical teachers are not invariably interested in teaching, much less in teaching as an art-science. With such individuals, as with many teachers in other disciplines at the undergraduate and postgraduate levels, the attainment of an academic appointment is a means to an end which does not include teaching as such. Their concern in seeking an academic post includes such ends as opportunities for research; accessibility to a quantity and variety of clinical materials, records and physical facilities not ordinarily available in non-teaching institutions; the opportunity to make frequent professional and social contacts of a stimulating character; the enhancement of self-esteem, authority and prestige; economic security or, in the case of some part-time teachers, a command of higher professional fees; the circumvention of certain unpleasant aspects of private practice; and similar determinants of action. For such individuals, teaching constitutes an unwelcome but necessary chore—the chaff they must handle in order to obtain the desired wheat. Accordingly, it receives a minimum of attention, time, planning, and effort at continuous personal improvement.

Secondly, the historical development of medical teaching in this country, characterized until the late nineteenth century by the preceptor, proprietary school and repetitional systems of in-

struction (as opposed to the university and graded curricula of Europe), has been such as to becloud rather than clear the differences between knowing a subject and knowing the devices by which it can most effectively and economically be communicated to medical students. And although present-day medical teachers often give *lip service* to the distinction, many of them (including those who genuinely like teaching) *behave* in their daily activities as if it is only necessary to be well informed in their chosen technologic areas to qualify as competent teachers. The communication process, so inherent in all teaching, is somehow left to take care of itself. A few individuals actually exhibit a modest pride in the ineptitude of their teaching efforts, covertly implying that by this token they rate a peg or two higher as investigators, clinicians, etc.

Thirdly, up to the present no insistence upon a sound preparation in educational science has been made a prerequisite to medical teaching by those responsible for the hiring of faculty staffs. Equally significant is the fact that no ready provisions are at hand, in or out of the medical colleges, for such preparation. The standard premedical curriculum of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association does not require a course in general psychology, although it clearly specifies physics, chemistry, biology, sociology, English and foreign language. Moreover, the catalogues circulated by the medical colleges themselves do not include courses in the science of education among those "recommended." It may be added that neither general nor educational psychology is available in the medical schools. As a consequence, a very considerable number of medical graduates from whom faculty members are eventually recruited have never had so much as an introduction to general or educational psychology. Very few of them feel the impulse to pursue such courses "on their own." It is therefore not surprising that the potentials of these disciplines for improving medical education go largely unperceived, much as those of physics, chemistry and biology went unperceived before they became integral parts of premedical and medical education.

Fourthly, no very high premium is placed upon teaching skill as such in determining initial appointments to the faculties of our medical colleges, advances in remuneration, and subsequent promotions. By far the highest premium is placed upon research performance in the basic and clinical sciences and upon the teacher's reputation among his peers for originality, consistency, and dependability as exhibited in his contributions. In placing the emphasis here, the school makes a "quick deal" to its own advantage, sharing the halo effect radiated by its reputable staff members. It hopes thereby to attract more and better students and, in the long run, more and better applicants for staff positions. Second only to research in determining the worth of the candidate for appointment or promotion come clinical diagnostic acumen and therapeutic skill. It is a melancholy and all too frequent circumstance that when a faculty member is "up" for promotion to an academic rank, e.g., full professorship or chairmanship, with which his extradepartmental fellows are concerned, the council reviewing his *curriculum vitae* is inclined to give more weight to the number of papers to which his name is attached than to their quality. This is an easy sort of error to fall into, for the simple reason that it is one of omission and default rather than of commission.

Few of those on the council are actually capable of critically examining their colleague's writings; and those who are often prefer to take someone else's word. It is, after all, a time-consuming, troublesome and not infrequently thankless task to embark upon a rigorous evaluation of a colleague's scientific writings. The task is even harder in respect to his teaching ability. If teaching ability is mentioned at all, it is cursorily described in adjectival terms, "excellent," "good," "fair," etc., and left at that. No serious attempt is made to establish clear criteria by which teaching ability may be evaluated, least of all to implement measures by which a particular teacher's classroom, laboratory, or bedside performances may be examined in terms of those criteria. "Teaching," say Lippard and others,[29] "should be regarded as a major endeavor, not an adjunct to research." In the medical colleges we have scarcely begun to act in accord with this wise exhortation.

Fifthly, the voice of medical education as a formal discipline, expressed in terms of publications, is but feebly uttered by its advocates and, for the most part, poorly heeded by those who should be most concerned. The same may be said for its local and national society meetings.

The best estimates indicate that there are about 178,000 physicians practicing in the United States. Of the 15,563 engaged in teaching in medical schools in 1951, some 14,000 were physicians.[12] The remainder consisted of those with degrees other than the M.D. Hence, the ratio of physicians manifestly concerned with education in the 79 medical schools operating in this country to those not so concerned is approximately

8:100. These figures do not, however, fully reflect the working circumstances, for with few exceptions every doctor must play an active role, however informal, as a teacher. He is likely at one time or another to be concerned with the instruction of interns, residents and fellow practitioners at hospital rounds, journal clubs and departmental meetings, at local medical societies and mortality-morbidity conferences, and in military service. His services are likely to be recruited for the instruction of nurses, ward aides, physical therapists, laboratory and radiologic technicians and similar paramedical personnel, and he is in any case destined a play a role as teacher among his patients and their families. It will be recalled at this point that the term "doctor" (*doceo*, L.) originally meant teacher.

In view of all this it is noteworthy that, excluding periodicals dealing primarily with physics, chemistry and psychology, over 800 journals are subscribed to by most modern medical libraries of which one only addresses itself to problems in medical education. This circumstance can be pointed up by noting that in the area of internal medicine alone there are upwards of 142 periodicals; in experimental medicine, 27; in surgery and the surgical specialities, 62; and in neurology and psychiatry, 48. By far the majority of these are published monthly and not a few appear weekly. The single journal devoted to medical education, *The Journal of Medical Education* (1951-), is a bimonthly periodical, originally appearing as the *Bulletin of the Association of American Medical Colleges* (1930) and later as *The Journal of the Association of American Medical Colleges.** This is eloquent evidence of the relative interest in educational science and communication skills exhibited by current-day physicians. And this is but part of the story. In an informal pilot survey carried out in 1949 among 85 teachers distributed in four medical schools, thirteen (15 per cent) did not know of the existence of this journal; fifty-two (60 per cent) acknowledged they had never read an article published in it; and thirteen (15 per cent) declared they read it "only occasionally." Only six educators asserted that they read the periodical regularly and systematically. This merely suggests the state of affairs that prevails among educators. Until a thoroughgoing survey is carried out among physicians at large, the circumstance must remain a matter of conjecture.

The situation is the more regrettable because of the current shortage of medical teachers. The medical colleges are under heavy pressure to educate more physicians. This of course necessitates the recruiting of more instructors. High standards in the selection of instructors cannot be rigorously insisted upon and the machinery for rectifying matters is at present so meager that the outlook for the year 1970 as anticipated by farseeing medical educators and administrators[12, 21, 29, 39] can only be described as grave.

Finally, there are those who openly express skepticism that principles and technics arising from research in general education and learning psychology have very much to offer medical education. "Medical faculties," say Darley and Turner,[11] "are rightfully distrustful of principles arrived at by teaching young children or rats and other laboratory animals." These promise to be welcome words to those who seek rationalization for their current unfamiliarity with educational science and methodology.

Here, then, are six identifiable reasons in explanation of the circumstance that medical education has felt so negligible an impact from educational science. The list is in no sense as complete as it might be made.

II. ERRORS IN METHODS

The conventional view is that the term "medical education" refers to those operational events focussed upon and experienced by the student during the four years that lead up to the M.D. degree. Some writers go somewhat beyond this to include also the premedical years and/or the internship. Whatever concept is embraced, it is important to realize that medical education is not a process that occurs *in vacuo;* rather, it takes place in a complex cultural setting in which the historical past inevitably plays a time-binding role, affecting both students and staff members and influencing the philosophic goals of the curriculum, its content and scope, and the methods of their implementation.

In a very real sense the education of a physician begins early in the preschool period and continues through all the years of his practice. Beyond the internship his education may or may not include a residency, fellowship, and courses of postgraduate study, but it is in any case certain to include the widening of experience and the maturing of judgment engendered by daily practice, the reading of medical literature, contacts and consultations with fellow practitioners, and attendance at hospital rounds, staff and society meetings.

This is at once a comprehensive and deterministic concept of medical education and its adoption carries important implications. Among other things, it points up the fact that medical

* It became a monthly journal in 1953.

educators and administrators are in no sense free agents, but are of necessity involved in that cultural "lag" with which sociologists and anthropologists have become impressed during recent years. The corollary of this is that if a critical examination of medical education is to prove fruitful for the delineation of the more serious shortcomings, it must be divested from the outset of all implications of personal censure and vituperation. Its goal must be singularly that of improving matters, the first step toward which, as Dewey long ago indicated, is a clear identification of the "felt need" for it.

This is the detached and impersonal attitude which the present article hopes to preserve. With this as a take-off, we now invite attention to some of the more conspicuous faults in modern medical education.

1. *Unrealistic Concepts of Motivation:* Educational scientists of the present day have come to a clearer awareness than has ever before been evident that the learning process is to a considerable degree affected by the student's motivation. In fashioning technics for teaching and learning they consider motivation on a parity with intellectual capacity, physical health, emotional stability, socio-economic status, previous educational background and habits of work. Much careful research has been turned to evaluating the role of motivation in achievement and, in the more progressive schools, active steps have been taken to incite the student's motivation for the particular task at hand. Thus, in the "activity program" of certain schools in New York City, an elaborate marionette show may be exhibited by professionals before the fifth-grade class. The pupils are later asked whether they would like to stage such a show. The response being in the affirmative, the students are directed at the numerous tasks of learning the speeches of the characters in the play, making the marionettes, designing and executing the costumes, stage, curtains, backdrops and "props," painting the scenery, planning dances, learning the historical and geographic backgrounds of the play, and so on. Incidental to such activity, they acquire a rich fund of useful information in arithmetic and the algebra of proportions, in mechanical and electrical physics, in grammar, rhetoric and communication skills, in the fine arts, in human psychology, and in group dynamics. Cooperation rather than competition is the underlying theme. What is of high significance, as brought out in controlled studies, the principles and facts so acquired are generally better retained, recalled and reproduced than they are under the more orthodox "compartmentalized program."

In contrast to this orientation, most medical educators deal with premedical and medical students as if motivation is already a *fait accompli*, as if the mere declaration of the student's intention to become a physician or his voluntary matriculation in a college of medicine is ample guarantee that he will devote himself assiduously to the acquisition of all materials conceived by his basic science teachers as essential to the proper practice of medicine. The incorrectness of such assumptions can be attested by every student capable of honest introspection.

Many a premedical student entertains serious doubts that the physical principles, formulae and data he is asked to master in hydrostatics, hydrodynamics, adiabatic expansion, etc., bear in any way upon the practice of medicine. Taught under the compartmental systems, his motivation for acquiring such material is low. He has, to be sure, a motivation of sorts, but this is likely to be more immediately related to passing the next week's test than to the ultimate management of clinical problems.

Fortunately, this state of affairs need not exist. A single visit to the bedside of a patient in whom a tidal drainage apparatus is being employed to provide intermittent urinary elimination and a few well-directed questions by a clinician earnestly interested in problems of student motivation would tap resources whose existence might not otherwise be suspected or imagined.

Numerous similar examples could be cited to demonstrate how ineptly the factor of motivation is handled in the medical schools as well as the premedical. The following is illustrative. A sophomore at the State University of Iowa was recently peering through his microscope, examining pathologic tissue, when an instructor stopped at his bench and posed a few routine questions bearing on the exercise of the day. The student, unable to furnish satisfactory answers, arose in bitter and unexpected reproach and demanded to know what "good" could be expected to accrue to him from all this detailed microscopic study — his intention was to become a psychiatrist! In such a situation, the onlooker's first inclination might be to fall in line with the instructor's open censure of the lad. This however appears to be unrewarding. The fact that such a question can arise at all in the mind of the student is clearly a phenomenon that merits notice in its own right. The more mature course of action would be to ask one's self in what manner the school had failed to motivate the student properly. A proper answer to such a question would go far toward salvaging not only this student but others among his less vociferous companions.

2. *Preoccupation With Psittacotic Answers:* It is a regrettable circumstance that in the education of the medical student, as in his earlier formal and informal education, the highest premium is placed upon answers—parrot-like answers—while virtually none is placed upon his ability to ask questions.

As every parent knows, the preschool child characteristically exhibits a high predilection for asking questions—sometimes embarrassingly pertinent questions. Further, the child's queries are usually highly extensional, in that the form of his questions provide palpable conditions for reaching meaningful answers. This amazing capacity is, unfortunately, slowly attenuated and, as the child moves more and more among the adults of his social environment, comes

to be all but extinguished. By the time he is well along in grade school he has often become quite content with isolated bits of information, i.e., with figures without background. He is glad to learn, for example, that the moon is some 238,000 miles from the earth and he seems especially pleased with himself if he can furnish this datum when occasion demands. He has not, however, perpetuated and further sharpened the habit of asking automatically *how* and *by whom* the datum was reached and to what extent it checks with other fragments of information, e.g., the statement that the equatorial circumference of the earth is approximately 25,000 miles.

The compartmentalizing of the medical curriculum has seriously compounded this felony. Each specialist responsible for giving a course seems imbued with the supreme importance of his specialty to the practitioner-to-be. At committee meetings he contends with his colleagues for more curriculum hours and, in the interests of "completeness," he crowds more and more "factual" data into his sessions. To further economize his time and effort, he develops the habit of speaking *ex cathedra*. Woe unto the student, who, under examination, cannot furnish the structural formula for tyrosine and adrenaline, list the tissues of the body which have a high capacity for regeneration, give the normal levels of serum potassium, sodium and chlorides, and recite upon the organisms found in the progressive bacterial, synergistic gangrene of Meleney!

Somewhere in our travels we appear to have lost that interest, conspicuously exhibited by Claude Bernard and Thomas Henry Huxley, in a play-by-play familiarity with *how* answers are arrived at in the course of scientific inquiry. Lacking this, our students fall ever and again into errors that they should have been able to eliminate long ago. Repeated experience manifestly does not pay the dividends it should and the chief reason for this regrettable circumstance seems to be that understanding is not habitually sought in its own right.

When the student does ask a question, he not infrequently exhibits an unbelievable naiveté in word magic. He evidently thinks that if a grammatically correct sentence terminating with a question mark can be formulated there must somehow, somewhere be an answer. That the terms of the question themselves and the hidden and manifest assumptions inhering within them are the inevitable determinants of the answerability of the question does not appear to strike him as important. The crowning disappointment is that so many of his teachers, even the most reputable of them, are equally naive in this respect.[32]

In time, the student comes to acclaim most warmly that teacher who furnishes him with the *answers* he will need to gain high grades on tests, to pass the course, to graduate, to earn a coveted internship and to weather the examinations of the boards of medical licensure. Contrarily, his discomfiture and dissatisfactions are most acute in the presence of that teacher who makes the probabilistic and pathogenetic aspects of the sick individual the underlying theme of his teaching efforts. In a word, *for the student* symbol-manipulation comes insidiously to take precedence over the realities to which it supposedly corresponds.

All this contrasts strongly with the growing conviction derived from research in education—*that to be intelligent is to be aware of relationships.*

3. *Failure to Practice Scientific Method:* Despite the fact that the average senior at medical school has been exposed to scientific technology for upwards of seven years, he frequently proves wholly incapable of describing scientific method and is even less practiced in bringing scientific method to bear on the problems with which he is daily confronted. The reason for this is not hard to find: his preceptors commonly do not know or, knowing, do not themselves regularly practice scientific method. The latter observation can nowhere be better documented than in a critical review of technical articles prepared for publication in medical journals by his teachers and accepted by editors reputed to be discriminating. In the aggregate, it is no exaggeration to state that four out of every five articles are frankly impressionistic, prescientific or pseudoscientific.

Not only are the more familiar logical fallacies (e.g., *post hoc, ergo hoc*) committed over and again, but there is a conspicuous lack of appropriate use of the principle of control; of the conviction that observation is the only authority that can be appealed to; of a proper feeling for statistics; and of awareness of the arbitrary and the man-made character of nosologic classifications. Insubstantial dichotomies are allowed to survive and obfuscate our thinking.[34] Operationalism, that scientific outgrowth of logical positivism which has paid such rich rewards in the areas of physics and chemistry,[7, 28] is virtually unknown to most teachers of medicine.

A recent episode in one of our midwest medical colleges may be cited to illustrate how far a body of scientific experts may unwittingly depart from scientific method in the endeavor to deal with a practical problem: that of "improving" the "orientation" of the junior class to the end that an "integrated view" of clinical medicine and its subordinate disciplines may be achieved. During the summer months, the curriculum committee decreed that the first eight weeks of the junior year should be devoted wholly to orientation lectures and demonstrations. This entailed, of course, a considerable revision of the older schedules, incommoded a number of teachers (without first consulting them to enlist their suggestions and cooperation), and called for college administrative adjustments of major proportions. In effect, the students sat in the amphitheater from 8 a.m. to 12 noon and from 1 p.m. to 5 p.m. five days a week for eight weeks, listening to "integrated" presentations of such subjects as headaches, hypertension, and peripheral vascular disease by panels of three to four faculty members drafted from various departments. (Each panel was required to meet apart from the students a week or more before its scheduled

hour in order to make certain that the topic would be comprehensively covered, to reach agreement, wherever possible, on controversial issues and to plan the most effective sequences.)

The plan was executed as conceived. But what had been wholly overlooked in the experimental design was the delineation of precisely what goals were to be sought under the vague terms "better orientation" and "more integration"; the decision as to which yardstick should be used—and by whom—to ascertain whether the envisioned goals had been reached; a preliminary agreement as to what criteria should be invoked for the over-all evaluation of the experiment (in comparison with the conventional program); and a consideration of other conditions of presentation than those adopted. No "control group" was either envisioned or provided for. In brief, a considerable change had been arbitrarily implemented without the slightest possibility of determining whether it could in the final analysis be considered an "improvement" over the older system. If any "answers" were to be reached concerning the virtues of the new program they would have to be derived from fallible impression, intuition, inspiration or divine revelation—not by way of the method of science.

If this is the *modus operandi* endorsed by responsible faculty members it may be questioned whether we have any right to expect a better performance from students of medicine of whom they are the esteemed preceptors.

4. *Lack of Familiarity With the Nature of Perception and the Laws of Learning:* The manner in which classroom exercises and sectional demonstrations are conceived and executed and the procedures employed in effecting changes in the curriculum again and again reveal an ignorance on the part of medical teachers of such matters as the nature of discrimination, abstraction and generalization; the span of attention; the laws of primacy, recency, frequency, contrast, and varying concomitants; the principles of learning by wholes; distribution in time; over-learning; entelechy and figure-background relationships; and the means of facilitating and measuring the psychologic processes of acquisition, retention, recall and recognition.

It does not appear to be generally appreciated that learning is eminently an *active* process and that in the long run it is most economically brought about when the student learns by doing rather than by listening, watching and verbalizing. The latter have value, but *only* when the student has acquired corresponding referents – and this requires activity.

Closely bound up with these matters is the lack of clear realization of the faculty-student relationship and the conditions that foster such. Moore[36] ventures to propose that both faculty and students are, in fact, students working at different levels of learning. This attitude tends to dissolve the archaic distinctions between student and staff that have for, lo, these many years proved inimical to the best conditions of work. Above all, it abrogates authoritarianism. Were it to be embraced by faculty members, the student could expect to be treated as a person, much as modern practitioners advocate the patient should be treated.

Not the least result of the adoption of this attitude would be its effect upon tests and examinations. In some schools and departments the student is kept completely in the dark regarding his score on tests. His papers are never returned to him; he is not encouraged to perform an "autopsy" on his own papers (although his teachers continually urge upon him the value of the autopsy in helping him correct clinical errors); and he is not made familiar with the errors commonly committed by his classmates. Least of all is he given cogent advice as to the technics of preparing for and writing examinations. In brief, the teacher looks upon the examination solely as an instrument for evaluating the student. That it might be made a learning device, a means by which the student might measure his own progress and by which the instructor might evaluate himself as a teacher are potentials frequently disregarded.[11]

5. *Imperception of the Roles of Communication and Listening Skills, Group Dynamics, and General Semantics in the Education Process:* Wendell Johnson[25] has asserted that the better part of science is its language. Be this or not, it is certainly true that the greatest portion of the scientist-teacher's time is spent in communicating—in listening, speaking, reading and writing. What is not generally appreciated by the medical educator is that these communicative processes constitute as legitimate objects of scientific study as the molecular exchanges of gases between blood and lung tissues and the circumstances under which porphyrins appear in the urine. Whether he wills it or not, they are his business, his stock in trade, and as such they deserve his sober attention.

Language clearly carries potentials for frustration and trouble as well as for organic adaptation, sanity and happiness. Failure, for example, on the part of the medical teacher to be aware of the entropy that unavoidably besets every communicative event, failure to *expect* that he will be misunderstood, at least in part, whenever he speaks and that he will misunderstand, at least in part, whenever he listens, is without doubt one of the most disruptive of influences with which the teacher and his students must deal. How often do we hear the remonstration, explicit or implicit, "I *told* you thus-and-such; are you deaf or just stupid?" and the embarrassed apology, "O, I thought you meant———!"

Within the past twenty years two conspicuous projects, the Group Dynamics studies initiated by Kurt Lewin and the General Semantics methodology evolved by Alfred Korzybski, have uncovered valuable behavioral formulations and described intra- and interpersonal technics that permit humans to achieve greater harmony among themselves and greater control of their physical and psycho-sociologic environments. These principles, if systematically employed by faculty members, would almost certainly promote healthy communication among the several departments, reduce interdepartmental tensions, en-

hance efforts to set up and pursue over-all goals, and perhaps achieve that "correlation" within the curriculum which has been so much honored in talk and so little implemented in action. "Better faculty communication," advise Darley and Turner,[11] "would lead to improved experience for the student."

III. THE SEARCH FOR BETTER WAYS

Having followed the discussion up to this point the student of general education is likely to conclude that the teaching in our medical schools must be of a poor quality indeed. Actually, such is not the case. Despite the general lack of deliberate preparation in the field of education, medical teachers often do their work well.[11] "Some are born teachers," says Slobody,[43] "and do a good job without knowing anything about principles of education." It only remains for us to determine whether or not a better job and greater progress would result from a more specific training in educational science and research.

Happily, we do not lack for men of vision, originality, courage and catholic outlook. And while rigorous scientific method cannot be said as yet to have been brought to bear on a single facet of medical education, a start has been made, if only in the sense that (a) more and more meaningful questions are being asked by leaders in the area, (b) issues are being ever more clearly defined, and (c) a certain amount of necessary spade work has already been performed. These encouraging signs will be briefly reviewed.

1. *The Philosophy of Medicine.* For some centuries western medicine has embraced the ideal of *preserving life* as long as possible, *providing optimal function* for the individual in health and disease, and *offering comfort and assurance* to those in sorrow and pain. Until recently, physicians have complacently nurtured these ideals without concerning themselves with possible repercussions on other aspects of human endeavor —the ecologic welfare of the community, the law, nationalism, imperialism, religous and other socio-ethical institutions. It now appears that physicians must assume a role never before played in cooperating with their fellows to the end that extramedical and medical ethics may be brought abreast of one another.

Scientific method has been so successfully employed in medicine that the life expectancy of the newborn American infant is now 26 years greater than that of the child born in 1900. The population of North America is becoming increasingly "top-heavy" and geriatrics, as a branch of medicine, has assumed an unprecedented importance. Surely, it is but a matter of a few years before these measures will be brought to Asia, Africa and other exotic parts of the world.

Unfortunately, these scientific achievements have brought with them unexpected socio-economic problems. Ecologists and others[50, 52] have closely calculated the arable acreage of the globe, actual and potential. Convinced, as many of them are, that the biologic welfare of each individual requires at least 1.4 acres, they find a disquieting discrepancy between the world's population and the ecologic potential for sustaining it. Their extrapolations into the future sound a deeply ominous note for the next generation and we dare not shut our eyes and ears to them. What will the medical man of the forseeable future have to say of the over-all wisdom of current, rigid ideals? Of the political and economic concepts of free enterprise? Of the church's ethical concepts concerning contraception, abortion and so on? His participation in the efforts to solve community issues of this sort can no longer be postponed. It is gratifying to note that medical men are descending from their ivory towers in increasing numbers, humbly joining their fellows in the urgent tasks that confront all of us.

2. *The Philosophy of Medical Education.* Almost simultaneously within the past five years there emerged from Great Britain and the United States clear-cut formulations as to the aims of medical education.[23, 26, 47, 48, 49] This constitutes a point of new departure. Henceforth, empirical experience can be used as a check against the newly issued code, modifying and being modified by it as necessity dictates.

Briefly summarized, the envisaged aims of the *premedical* course are "to inculcate the student with scientific method and provide him with the basic principles and data upon which the study of medicine should properly be founded . . . without any special vocational emphasis." The aims of medical education itself are to equip the student with sound basic principles, including the scientific outlook and method; a knowledge of the art of medicine and the fundamentals of the medical sciences; competence in, and understanding of, certain indispensable technics; and intellectual resourcefulness and initiative in the handling of unusual and unexpected situations.[26] Teamwork and a perception of the social and cultural settings in which medical practice is inevitably performed receive their long overdue notice.[47]

3. *The Preparation and Selection of Students for Medical Education.* Less than a century ago it was unnecessary to have had even four years of study at a high school before enrolling in a college of medicine. At about the time of the preparation of Abraham Flexner's[18] now celebrated report on the lamentable state of medical

education (1903-1910), Dr. Fred Zapffe induced the medical colleges to require two years of preliminary college work, study to be distributed among the physical sciences and the humanities. This period of preliminary study was later increased to three years and the most recent (1952) recommendation handed up by the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association calls for a four-year course.

The admissions committees[4, 8, 14, 15, 23, 24, 38] are now asking such pertinent questions as, how should an admissions committee function? What sources of information concerning the candidate should be tapped in order to appraise his fitness for medical school work? What is the responsibility of the liberal arts college to the student planning the study of medicine, and how can it help the medical school in the selection of matriculants? What is the fate of rejected applicants, and how sure can we be that they would not have succeeded as medical students and physicians?

At present, the decision to accept or reject an applicant is in most schools reached in terms of:

1. Biographical material
2. College grades (*general* grade point average and *science* grade point average)
3. Nature of collegiate courses taken
4. Evaluation of the college attended (in full recognition of varying standards from school to school)
5. Letters of recommendation from persons who know the applicant well
6. Personal interview(s)
7. Health and emotional stability of the candidate, and
8. Scores on psychological tests (the General Aptitude Test Battery and the Medical College Admissions Test)

With the exception of the liberal arts college grades, no very appreciable positive correlation coefficient between these items and the student's performance during the freshman year in medicine has been demonstrated. Still less can they be made a basis of prediction concerning the over-all performance in medical school and the more important performance of the practitioner. For that matter, no correlation studies have been projected by which performance in medical school might be made a forecast of the individual's performance as a practicing physician. The "late starter" generally fares poorly in our current impressionistic methods of predicting his future. Yet important questions and some preliminary studies concerning the value and optimal technics of interview and the validity of and requisite revisions of the Medical College Admissions Test are discernible.[23, 38, 44, 45] Finally, encouraging communication via liaison committees is being established between the liberal arts and medical colleges.

4. *The Medical Curriculum.* The gradual shift of emphasis from the particulate to the holistic consideration of the patient[16, 19] has raised many corollary questions, provoked much of the desirable discussion that precedes reform, and stimulated certain schools to try innovations never before implemented. These innovations can hardly be dignified by the term "experiments," for no yardsticks have been evolved by which the effects of the revised program on the student can be measured and no reliable control studies have been undertaken. The conviction has, however, been growing among medical educators that the student must not only participate but must be given a significant degree of responsibility in the provision of medical care for the patients assigned to him *and* their families. Several trial programs have been set up in which the student follows the patient into his home and familiarizes himself with the psycho-socio-economic conditions that are produced by and which play a potent reciprocal role in the patient's illness.[3, 5, 9, 11, 17, 22]

There has been a corresponding interest in a return (at least in part) to the old preceptor system.[46] In order to offset the predominating influence of "super-specialists" in the instruction of the medical student, the latter has been assigned for periods of from four to eight weeks to a reputable general practitioner. The student lives in the doctor's home, follows his daily activities and receives such instruction as only a general practitioner in his "natural habitat" can give.

Needless to say, these concepts of domiciliary practice and preceptorships have come in for a measure of criticism,[30] but this is healthy and essential to further progress.

Although the medical course is still confined to four years, the student's time within this period has been more and more appropriated. Whereas he formerly attended medical college for but 32 weeks of the year, he is now attending, on the average, 36 weeks and in some years 44 or more weeks.[1] This extension of the course has become necessary because of the evergrowing content of the medical curriculum. It is obvious, however, that such encroachment cannot go on indefinitely and certain medical educators,[11, 14, 19] realizing that in a four-year course the student cannot be expected to master all the factual information embraced by the entire field of health and medical activity, have urged a cooperative study by the faculty with a view to unloading the premedical

and medical curricula of non-essentials and striving for interdepartmental correlation.

5. *The Faculty and Technics of Teaching.* Some of the questions at present being discussed relative to the faculty are: What makes a good teacher? How is the teacher to be prepared? How is he to be recruited? Should medical schools strive uniformly for full-time teachers? How should the relations of full-time to part-time teachers and the community-at-large be defined? What are the desirable relationships among deans, faculty and administrative officers? How can communication between departments be fostered in the interests of an integrated curriculum? *While much lively debate rotates about these issues*[2, 10, 24, 35, 36, 37, 41, 42, 51] *no truly scientific inquiries have as yet been designed by which dependable answers might be reached.*

As to technics of teaching, the relative merits of lectures and other didactic methods, preceptorships, and small, informal study groups continue to be examined. There is a growing appreciation among the more progressive instructors of the virtues of (a) learning-by-doing and of (b) the employment of both vertical and horizontal correlation of subjects. In this connection the A.A.M.C., sparked by Dean G. P. Berry[6] of Harvard and supported by funds from the U. S. Public Health Service and the National Heart Institute, has recently sponsored a six-year program of "teaching institutes" in which medical administrators and teachers from various disciplines that "naturally belong together" (e.g., physiology, biochemistry and pharmacology) may meet in leisurely conferences of three days each with a view to increasing the effectiveness of medical teaching. A conference on world health and medical education was scheduled to meet in London during August, 1953.

The audio-visual aids to teaching—especially the conventional "silent" and "sound" movies, phase microcinematography, stereoscopic photography, three dimensional models, television and wire tape recording—have by now assumed a permanent place in medical education and are being extensively exploited by many teachers.

All evidence points to the fact that medicine is now in a period of critical growth[16] and far-seeing educators are inclined to agree with Page[40] when he predicts, "The attitude of the doctor of tomorrow will be allied to the spirit of the beloved family doctor. He will be a practitioner of 'constructive medicine,' a scientist trained in considering man as a whole human being. He will understand man's physiology and psychology and he will know that changes in man have a way of reacting on his whole environment and vice versa. The vitality of medical education rests with our ability to understand and transmit these concepts."

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The United States is short about 345,000 public elementary and secondary school classrooms. Three classrooms out of every five are overcrowded.

A PHILOSOPHY FOR OUR TIMES

(Concluded from page 86)

the possession of the few, and instead became the possession of a vast multitude.

The American experiment in education thus is of great historical significance. It may ultimately be even more important than the American contribution to technology. The great change of our time is not symbolized by the Russian Revolution of 1917 or the Nazi revolt of 1933, but by the development of free universal public education.

The critic might say that this is a rather romantic viewpoint. He may point to Public School 402 in a large city. Are not the youngsters ill-disciplined, the teachers underpaid, with a narrow background, and the administrators autocratic? Where is the brave new world of education?

Let us realize that our experiment in public education is of recent origin. We have just started; we are conscious of its shortcomings, but it offers a solid hope for the future. It points the way to survival, to a tower beyond tragedy.

We are living in climactic times. We are suspended between dawn and disaster. Perhaps the choice of our times is Public School 402 or Hill 402, the type of hill described so eloquently by Ernie Pyle in his *Brave Men*. Ernie Pyle describes the storming of the hill and how the tide of battle flowed on. When he saw the hill later, it was surrounded by a strange atmosphere of unreality. The countryside was quiet; in the distance artillery fire could be heard. The evidences of struggle were still apparent, abandoned machine-guns, helmets, and the bodies of men who would never march again. They would be praised by historians and politicians, many fine words would be said about their sacrifice, but they would not hear them. Ernie Pyle was struck above all by the *finality* of their sacrifice.

In the future, Hill 402 would be just an insignificant incident. Atomic destruction would dwarf all previous violence. It would represent a nightmare beyond human comprehension; it would be the climax of destruction, the ultimate in man's inhumanity to man.

Public School 402 may be a rather feeble defense against destruction when seen from the perspective of the present, but it offers a formidable basis for the future, a foundation for our aspirations, and a bridge for a better to-morrow.

It is estimated that by 1960 there will be 10 million more pupils and students in our nation's schools and colleges, both public and private, than there were last spring.

Inter-State Cooperation in Education

Something new was created in higher education in 1948, when the governors of the South signed the first interstate compact for higher education, which created the Southern Regional Education Board. Since then, this compact has been subscribed to by legislative action in the fourteen southern states from Maryland to Texas. Nineteen fifty-three marked an important anniversary, for the first four-year class of regional students was graduated. The compact provides that the Southern Regional Education Board "shall have the power to enter into such agreements or arrangements with any of the states and with educational institutions and agencies as may be required in the judgment of the board to provide adequate services and facilities for the graduate, professional and technical education of the citizens residing in the respective states . . ."

By HEATH K. RIGGS*

THE FIRST TYPE of regional action which developed out of the compact is known in the South as the "Contract Programs." These programs operate in medicine, dentistry, veterinary medicine, and social work. Other programs in other fields, based on memoranda of agreement are now underway. The purpose of this article is to give a brief description of this first type of regional program, its present scope, methods, a statement of the expected benefits, and a recent evaluation of the extent to which these benefits have been realized. Only a brief description of the expected benefits from the second type of regional programs will be given.

The contract programs now involve fourteen states in the compact area, nineteen higher institutions, both public and private, and over one thousand students in four professional fields. The program involved in 1952-53 alone over $1,300,000 of which about $550,000 was in medicine; $450,000, in dentistry; and $350,000, in veterinary medicine. The social work program, which did not begin until 1951-52, involves $25,000. About three fourths of the students are white and one fourth are Negro.

The contracts are drawn between the board and institutions, and between the board and states. The board thus is an agency linking states and institutions in the administration of regional programs. A state needing facilities in a given field requests of the Southern Regional Education Board a quota for residents of that state. The Southern Regional Education Board finds the number of requested places in institutions in other compact states. The university or college agrees to receive a quota of regional students from the contracting state provided the students are certified by the state as bona-fide residents and provided the students meet the institution's admission requirements. Once the regional students are enrolled, the institutions bill the board for a fixed amount per student depending upon the field, $1,500 in dentistry and medicine, $1,000 in veterinary medicine and $750 in social work. The board receives payments from the state through legislative appropriations. After checking certifications of residency, quotas, and amounts due under the terms of the contract, the board makes payments to the colleges or universities involved.

It is obvious that considerable motivation was necessary to provide for the establishment of these regional programs. Before the contract program was established, most state institutions were giving admission and tuition preferences to resident students. In states lacking certain schools, students in many cases were unable to gain admission or pay the high cost to out-of-state schools and, consequently, citizens were exerting pressure upon public officials to build advanced

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professional schools in each state. In many fields it could be clearly demonstrated (1) that a state needed more professionally trained men in a field but (2) that there were not enough potential students to justify building and operating a professional school. Further, state officials, already hard pressed, knew that not enough public money was available to build such schools and operate them year after year in each of an increasing number of fields and still carry the considerable education load at the elementary, secondary and undergraduate college level. Similarly, states operating professional schools were finding it difficult to support the existing professional schools.

Several of these factors which motivated the southern governors to enter into the the compact are clearly seen in the following resolution of the 1947 Southern Governors Conference:

Be it resolved by the southern governors here assembled:

(1) The future of the South is dependent upon the quality of its education;

(2) The several states standing alone do not have sufficient numbers of potential students to warrant the establishment and maintenance of adequate facilities in certain essential fields of technical, professional and graduate training;

(3) The several states of the South do not have the financial ability to furnish within the borders of each of the several states acceptable standards of training in certain categories of higher education above referred to;

(4) The southern states, or groups of such states within the region, can cooperatively provide highly acceptable and efficient educational facilities designed to meet the needs;

(5) That a committee of governors be named to carefully consider the problem and to develop and execute a program of immediate action;

(6) That such committee be authorized to do any and all things necessary to the end.

This resolution led to the creation of the Southern Regional Education Board.

The benefits which the states, institutions and students hoped to receive from a regional program, as indicated by the above analysis, may be summarized as follows:

The States hoped to benefit by

(1) increasing the quality and scope of services in their higher education program,

(2) increasing the number of professional people both in training and in practice in the state,

(3) saving money or avoid spending for new capital and operating expenses.

The schools hoped to benefit by receiving additional funds so that they might

(1) retain present faculty or enable the institutions to employ additional faculty,

(2) improve, replace or add equipment,

(3) enrich the curriculum,

(4) increase or maintain the capacity of the school or even prevent the school from closing.

The students hoped to benefit by

(1) gaining admission to professional schools presently closed to them,

(2) enjoying the professional advantage of entering a school already fully established and accredited,

(3) saving money on non-resident tuition fees.

In June, 1953, the regional contract program was four years old. The time was ripe for an evaluation of the program to find out to what extent these hoped for or expected benefits had been realized. During the last year the Southern Regional Education Board has queried state and school officials and regional students, as well as analyzed enrollment and financial data to see what the record shows.

This study disclosed that in June, 1953, approximately $3,779,500 of additional income had been made available to 19 colleges and universities located in 11 southern states. This is additional state support for higher education which these institutions would not have had without the program. Money is only one essential condition of quality of an educational program, but it is an important, necessary condition. The gain of these institutions is the state's gain.

Use of Out-of-State Resources

The scope of services available has been increased in 13 states. Florida and Mississippi lack four-year accredited schools of medicine; Florida had approximately 55 and Mississippi 77 medical students enrolled in colleges in other states in 1952-53 under contract. Nine other states which have a medical school within the state have extended their own facilities in medicine by sending 256 students to colleges in other states. Alabama, Florida, Mississippi, Oklahoma, and South Carolina lack accredited dental schools; these five and six other states, which are supplementing the places available in their own dental schools, are provided with places for about 300 students. Nine states, namely, Florida, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia lack accredited veterinary medical schools; the nine are provided with 350 places. Georgia is also supplementing its own services. In the social work program which started in 1951-52, Alabama, North Carolina, and Tennessee have 36 places.

Another hope of the contracting states was that the number of professional people both in training and in practice in each state might be increased. Increasing the number of professional

people in training under a regional program depends upon how much money a state wishes to appropriate for places and how actively a state wishes to recruit young people for a given profession. Florida has bought the most service under the program. Florida had 69 more dental students in all dental schools in the country in 1951-52 than it had before the contracts went into effect. The number of Florida dental students in training at all non-contracting institutions was two less. The number of Florida students in training at all contracting institutions rose from 64 to 135, an increase of 109 per cent. Similarly, Florida has 45 more freshman medical students in training in 1951-52 in all medical schools in the country than in 1948-49. The number of Florida freshman in training at non-contracting institutions was one less. The number of Florida freshman in training at all contracting institutions increased from 23 to 69, an increase of 200 per cent. A similar comparison cannot be made in veterinary medicine as national figures on residency are not available.

Will They Practice at Home?

There has been a great deal of speculation over the last four years as to whether students in training outside their home state under regional contracts would return to their home states to practice as there is no contract requiring them to return. All regional students were asked this question in a questionnaire in May, 1952. Two thirds of all the students enrolled in the four regional contract fields stated that they had already decided or expected to return to their home state. Only two out of 729 stated that they planned to practice in a state other than their home state and both of these plan to practice in the South. The remaining one third were still undecided because of liability to military service, plans for specialization and other reasons. A recent study[1] of 1940 medical graduates who attended medical school in their home state reports that for the United States as a whole 36.7 per cent were practicing in their home state six years after graduation. Our study shows that 51 per cent of the regional medical students expected to practice in their home states. Another recent study[2] of 1942-51 graduates of Pennsylvania veterinary medical schools, who were residents of Pennsylvania when they matriculated, shows that 64.7 per cent were practicing in Pennsylvania in 1951. Eighty-three per cent of the regional veterinary students reported that they had decided or expected to practice in their home states.

One way to realize how much money has been saved by the contract program is to consider what it might have cost the states if each compact state in the South which did not have a professional school in the four fields had established one. Using as a basis the replacement value of buildings and equipment and operating expenses of actual representative schools in the South in the four fields, it is conservatively estimated that the total cost would have been $64,000,000 to build the additional schools and at least $9,000,000 a year additional to operate them. By comparison, during 1952-53 the operation of the contract program will cost about $1,300,000 and no capital expenditure will be required.

To find out what benefits the nineteen colleges and universities had realized, in the recent study the administrators of the schools were asked for their comments on what their school had been able to accomplish with the additional money made available to their school. Their comments may be summarized briefly:

(1) Fifteen institutions have been aided in retaining present faculty members, improving salaries or adding faculty personnel.

(2) Twelve have been aided in improving facilities and equipment.

(3) Seven have been aided in increasing or maintaining student capacity.

(4) Five have been aided in enriching their curriculum.

(5) Most state institutions reported that the contract programs made it possible for them to accept out-of-state students.

(6) One institution credited the program with saving their institution from closing.

The students reported that they had benefited by gaining admission to professional schools. Fifty-six per cent of the contract students in dentistry, 70 per cent in medicine, and 93 per cent in veterinary medicine that applied to non-contracting schools were denied admission to all but institutions under contract. These schools reported that the quality of students admitted was either unchanged or improved as a result.

In addition to enabling more students to study their chosen field there is the added benefit of earning diplomas from schools fully established and accredited. All the regional students are in schools with faculties who have worked together for some time and in institutions which have passed through the minimum period of four years required before a school can become accredited.

[1] H. C. Weiskotten, M.D., "Factors relating to the Distribution of Physicians," *Proceedings of the Annual Congress on Medical Education and Licensure*, Chicago, February 10-12, 1952, pp. 18-21, Table 10.

[2] *Veterinary Medicine in Pennsylvania: Training Facilities and Practice:* A Report of the Joint State Government Commission to the January Assembly of the Commonwealth of Pennsylvania Session of 1953, p. 23, Table 3.

Finally, regional students are treated under terms of the contract as resident students. In public institutions this means that regional students do not have to pay non-resident tuition fees. To such students this saving in 1952-53 approximated $96,000, or more than $200 per student.

Memoranda of Agreement

As the contract programs reach maturity, other regional education programs are developing. During the last year and one-half memoranda of agreement programs have been evolved. They do not involve the exchange of funds between states. Institutions which offer a program in a certain specialization of urgent need for the development of the region subscribe to a statement of intent to cooperate in a given field. Thinking in terms of combined potential capacities for meeting regional and national needs, the colleges and universities call industry and government into the planning. Five such programs have already been established in forestry, pulp and paper, marine sciences, city planning and petroleum sciences. Eighty such programs have been suggested.

Some of the expected benefits from this type of program may be illustrated by forestry. A commission composed of representatives of the six accredited forestry schools in the region, after a great deal of study, has reached a series of significant conclusions, two of which are:

1. That needs be carefully considered before any additional forestry school is authorized by an institution. The capacity of present accredited forestry schools in the South is adequate to meet present student demand and needs of the profession for graduate foresters. Distribution of such schools seems to leave some gaps, however, particularly in the western part of the region. Needs in that part may later develop demands sufficient to require an additional accredited school.
2. That all institutions giving graduate work in forestry plan their offerings to meet regional needs and demands, with as large an amount of institutional specializations as is consistent with sound educational practice.[3]

This group has since developed a regional plan. First, it has worked out a statement of the undergraduate and graduate offerings of each of the institutions. Anyone can tell at a glance the number of schools which are offering master's degree work in one or another of the various fields of forestry specialization and whether additional offerings are needed. Second, all six schools have adopted a policy requiring at least one quarter or semester longer time for a graduate from an unaccredited forestry school and at least one year longer for a graduate of a liberal arts course. Universal adoption of this policy will prevent students from shopping around and playing one school against another. Third, the schools have approved a two-year sequence of required and elective courses which can be taken at institutions not having forestry schools. This will enable a student with a record of sufficiently high quality to take the first two years at an institution without a forestry school and then transfer without loss of time. This will reduce the cost to students who can take the first two years at home and encourage other schools to serve as "feeder" schools to the forestry schools. This should increase the number of forestry students and delay specialization until the third year. Fourth, the schools are working together on a bulletin which will describe the opportunities and attractions of careers in forestry in the South. Finally, the schools in collaboration with the board, have sponsored a meeting of government officials (both state and federal), leading industrialists in the forestry and forest products world, and forestry school representatives. They were asked to search for answers to pressing questions of mutual concern such as how can the number of forestry students be increased, how can instructional programs be improved, and how can research programs be expanded.[4]

General Benefits of the Program

If a slight generalization may be permitted from this regional program which has just been described, and from the other regional programs which have not been described, perhaps a summary of the expected benefits of this type of regional program might look like this:

(1) Periodic regional planning in a given field.

(2) Differentiations of research and teaching programs and development of complementary specialties.

(3) The focusing of academic efforts on scientific and personnel problems of government and industry, and governmental and industrial efforts on those types of academic problems in which they can offer advice and assistance.

(4) The use of off-campus research and educational facilities.

(5) The establishment of a system of institutional, governmental, industrial action which should appeal strongly to sources of private funds which have contributed little or nothing to southern higher education in the past.

(Concluded on page 103)

[3] *Toward a Regional Program of Forestry Training and Research in the South:* The Report of the Commission on Forestry and Related Training. Atlanta: Southern Regional Education Board, 1952.

[4] Many of the same points made in this paragraph are reported more fully in the following article: W. J. McGlothlin, "Regional Planning in Forestry Education," *Southern Lumberman*, Vol. 185, No. 2321 (Dec. 15, 1952) pp. 147-149.

How Shall We Produce Our Scientists?

Probably nobody would dispute the statement that a prominent factor in the rise of America to its present position of world leadership is the American scientist. Many would assert that our leadership may be attributed more directly to our advanced technology than to any other factor in our national life. All will agree that the maintenance of our place among the nations will depend even more in the future upon our ability to remain in the vanguard in scientific research and developments.

Thus may we ask these questions: How many scientists have we? How many are needed? Even more to the point, "*How do we produce scientists?*"

By RAY C. MAUL*

THIS QUESTION of how we produce scientists has far greater implications for the American school system—elementary, secondary, and higher—than is perceived at first glance. It has a direct relation to the work of every teacher of every subject at every grade level, but one segment of the teaching corps carries a special kind of responsibility. To elaborate this point is the intent of the following paragraphs.

Who Is a Scientist?

Many of our citizens seem to regard a scientist as one set apart from the general run of human beings—a special and perhaps exclusive category of persons with unique talents of an inborn nature. This fallacious assumption frequently goes so far as to imply that these unique creatures exist in greater numbers in our society perhaps because we are born under Western skies, or under a democratic form of government, or, more vaguely, just because.

The fact is, of course, that America has a more plentiful supply of all types of scientists *only* because the American system of education has done a better job of *identifying* youth with scientific aptitudes, *orienting* these youth at the optimum moment of emerging interest, *encouraging* them to explore their interests and capabilities, and *making possible their continued study* to the most advanced levels.

These steps, which add up to college graduation of a far greater per cent of our youth than is the case in any other country, have provided this nation with a constantly expanding stream of inquisitive researchers—those at the perimeter of a field of knowledge, extending the fingers of pure science into the unknown, and those bent on the development of more practical ways to apply new discoveries to the procedures of the everyday life of all the people. These two groups, with an individual sometimes shifting from one to the other and back again as his particular insights and imagination dictate, have come to be an accepted part of our society. The American people, as a nation, assume a complacent attitude that *of course* we not only have but will continue to have enough builders of the technical "know-how" to keep us out in front of other nations. In this smug assumption may lie one of the greatest dangers to our future national life.

Unschooled Genius Will Become Rarer

The very fact that this has been so true, that America has contributed so many of the material things which add to our safety, health, comfort, and convenience, for example, has lulled us into the presumption that such will always be the case. At this moment, however, we are in a period of transition which is fraught with danger.

We are already well into what may be an indefinite era of international tensions. Our children today may spend their adult lives in a world divided into two ideologies. It may be necessary for us to live as an armed camp for an indefinite

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period. We may be hard put to maintain our present position. Surely, we will need to depend upon our technological leadership in a more vital manner than in the past.

With this obvious need for scientific leadership, we return to the question, "*How do we produce scientists?*" The American way is to depend upon our educational system to supply the opportunity to each generation of youth to come up with its share. Under our system we must feed into our national life a constant flow of qualified personnel for each phase of our complex activities. This is particularly true in the fields contributing to national defense. The role of the scientist thus stands out in even bolder relief. We cannot skip a school generation—not even a year—in this production of highly trained personnel.

Not only is there a need for increased numbers, but the training of our men of science must be more comprehensive. As the complexities of modern life increase, the formal preparation must provide a broader base of understandings and appreciations. The unschooled genius of the past will be an even more rare creature in the future. Tomorrow's successful leaders will be more highly trained or they will simply cease to be leaders in a competitive world. This may well be the distinguishing characteristic of the coming era.

What Is the Role of the School?

This question points up the entire matter. In America, where every person has the opportunity to compete for the highest levels of service, we want—and must have—the talent, wherever we may find it. We know that a contributor to tomorrow's progress may come from any stratum of today's society. A basic purpose of the American public school system, therefore, is to provide the opportunity for talent to emerge, wherever it may be. We literally place all of our youth in a giant sieve, in the hope and the expectation that those with particular talents for each kind of activity will be identified as "trial" experiences and explorations are provided. In a controlled educational environment the youth of this nation literally sort themselves into groups for vocational purposes. From our schools—and particularly our high schools—emerge groups of young people bound for the various activities which comprise our national life.

By his own choice each youth selects his future occupation. Some will continue in preparation while making further explorations and while conducting further tests of interests and aptitudes; some will plunge directly into intensive preparation for a chosen occupation.

To provide the stimulation of potential interests, to recognize those emerging interests, to discover aptitudes, to identify students with a bent for continued study of the basic sciences of mathematics, biology, chemistry, and physics—these steps underline our future supply of scientists in unmistakable fashion. These steps are best taken during the years of high-school attendance. That has been shown to be the optimum time for effective vocational counseling.

And who, above all others, can take these vital steps? Without question, the teachers of mathematics and the sciences not only can but must do so. They not only discover and encourage future teachers of these subjects; they discover and encourage the students who will later constitute the leadership in all phases of science in our national life. It is this corps of high-school teachers, supported by teachers of other subjects and at other grade levels, who carry a unique responsibility for our national welfare in the realm of science. And the effectiveness of these teachers depends, in no small measure, upon the comprehensiveness of their own training.

The high-school student of today is confronted with a bewildering array of vocational opportunities. Meager flashes of many occupations come to him. A host of "things to do" impinge upon his consciousness. In general, his bases of judgment are woefully limited. He needs and looks for help. Here the teacher stands pre-eminent. The teacher must recognize the gleam of interest, provide the tests of aptitude, and encourage further study.

What Are the Prospects for Teacher Supply?

But if this vital function is to be accomplished in high school we must have enough thoroughly prepared teachers in each of the fields of science to carry on. These teachers inspire confidence, challenge student interest, and lead effectively only as they are themselves masters of their respective fields. The very heart of the problem, therefore, lies in the present and future supply of qualified candidates for high-school mathematics and science teaching positions. Competent teachers of these subjects, being the ones who, above all, must spark the oncoming generation of science students, must be available in expanding numbers because the number of students to enter high school is about to turn upward, after a period of more than fifteen years of stability.

The 1953 edition of the annual national teacher supply and demand report[1] provides up-to-date information on this point. I shows that for the past three years the colleges and universities have

[1] Published in the *Journal of Teacher Education*, Vol. IV, No. 1, (March, 1953) 3-45.

TOTAL NUMBER OF COLLEGE GRADUATES, NUMBER PREPARED TO TEACH IN HIGH SCHOOL, NUMBER PREPARED TO TEACH MATHEMATICS, NUMBER PREPARED TO TEACH SCIENCE, WITH PER CENT OF YEAR-BY-YEAR CHANGES SINCE 1950

Year	Total bachelor's-degree graduates	Per cent change from 1950	Total graduates prepared to teach in high school	Per cent change from 1950	Total graduates prepared to teach mathematics	Per cent change from 1950	Total graduates prepared to teach					Per cent change from 1950
							General Science	Biology	Chemistry	Physics	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13
1950	433,734	...	86,890	...	4,618	...	3,009	3,473	1,660	954	9,096	...
1951	384,353	–11.4	73,015	–16.0	4,118	–10.8	2,772	2,815	1,342	578	7,507	–17.5
1952	331,924	–23.5	61,510	–29.2	3,142	–32.0	2,216	1,995	842	373	5,426	–40.3
1953	300,000[1]	–30.8[2]	55,468	–36.2	2,710	–41.3	1,796	1,830	722	317	4,665	–48.7

Source: Figures in column 2 were taken from Robert C. Story, *Earned Degrees Conferred by Higher Educational Institutions, 1951-52.* Circular 360a. December, 1952. U. S. Office of Education, Federal Security Agency. All other basic figures were taken from annual NEA reports on teacher supply and demand.

[1] Estimate. [2] Calculated from estimate.

produced fewer and fewer graduates qualified for teaching. More distressing, however, is the diminishing number of potential mathematics and science teachers. In 1950 the colleges produced 433,734 (bachelor's degree) graduates, of whom 86,890 met the requirments for high-school teaching certificates. Of this latter number, 4,618 were potential mathematics teachers and 9,096 were potential science (general science, biology, chemistry, or physics) teachers. Three years later, in 1953, the total number of college graduates had fallen 30.8 per cent, the total number meeting high-school certificate requirements had fallen 36.2 per cent, the total number prepared to teach mathematics had fallen 41.3 per cent, and the total number prepared to teach science had fallen 48.7 per cent.

In three years, while the fresh supply of potential candidates for teaching high-school science was being cut in half, new areas of demand for manpower arose. Industry, geared to the stepped-up defense production, expanded its call for science-trained college graduates. The call to military service, re-activated in late 1950, will continue to curtail on into the indefinite future the supply of men available for teaching positions immediately after college graduation. This latter factor particularly affects the fields of mathematics and the sciences, as normally about three fourths of the college students majoring in these fields are men. The competition of fields other than teaching, continues to be keen for women trained in these fields.[2]

The accompanying table, which shows a three-year trend in the production of new teaching candidates, presents a gloomy picture in the sciences. At the same time, these data point directly to the nature of the task if the situation is to be remedied. The entire approach to the supply problem must be conceived in new terms. It is no longer a problem of the teaching profession. Every citizen interested in the immediate and long-range welfare of the nation has a stake in our supply of scientists, and thus has a stake in the supply of teachers to produce scientists. The loss of this vital manpower is, indeed, cause for grave concern.

[2] For a more detailed discussion of men in the public-school teaching corps, see Ray C. Maul, "Are Schools Losing the 'Man' in Their Manpower?" *School and Society,* LXXVII (June 13, 1953) 369-72.

INTER-STATE COOPERATION

(Concluded from page 100)

(6) Reassurance of legislators who will know that in regional programs unwise duplication is eliminated and the expenditure of the educational dollar is wisely and economically planned.

(7) Services to states which lack schools, and either do not wish to duplicate facilities already existing in the region, or prefer to use their funds to develop other facilities.

Several years from now an evaluation of this new type of regional effort will be in order.

These, then, are two types of regional programs that have been worked out to date. Other methods may be developed later. Basically they recognize the fact that the demands for education in certain advanced fields, probably differing with the passing of time, always will be in numbers too limited for each state to provide economically for them within its borders. In this fact lies a promising future for regional education. As long as knowledge continues to grow, there will always be new fields of study and certain highly specialized established fields for which there will be a small but essential need for highly trained men to develop the various regions.

Today I Met Heidi

By MILLARD HARMON*

THIS WEEK END my wife and I drove to L—, a small German village in the British Zone, to visit a school teacher whom we knew only through correspondence. His students and mine wrote to each other often last year. Everyone enjoyed this activity, and our "objective," to use the educational term, was to teach writing in an interesting way, as well as create international understanding and good will among those few chil'ren who were under our guidance.

In the center of L—, we stopped our American car and I went into a small store to ask, in my inadequate German and often inadequate sign language, the way to our friend's home. When I returned to the car, an attractive young lady was reading the decals on the car window (decals are a weakness of mine), and speaking with my wife. This was Anita, who had just spent a year in the States as an exchange student. We were drawn to this young lady by her enthusiasm and sparkle. She was 17, but had the poise, beauty, and attractive personality of one much older. She was persistent in her hope that we might spend some time talking with her about the States. This pleased us, for we had covered the 300 miles of our trip faster than expected, and had plenty of extra time.

Anita was in love with the United States. We visited, looked at photographs, and learned a great deal about Anita and her family.

She and her mother had lived under the Iron Curtain, and after many sleepless nights of fear and apprehension decided to attempt an escape to the West. This was just following the end of the war. They had no papers to allow them to cross the border, but made themselves a part of a group of refugees. At the border her mother showed the guards a small booklet with official looking stamps on the inside. They were allowed to pass. She had shown the Russian guards an old bankbook which had a savings account listed.

Shortly we heard church bells in the distance, and Anita said that she had intended to meet her family at church. She wondered if we would like to go with her.

We entered the rear of the church and met her mother, stepfather (her father had been killed in the war), and Heidi, her little sister. We walked down the aisle, and entered a pew. As we sat there in that beautiful little church where Goethe once stood, I began to think of many things. I looked to my left and saw Heidi, four years old, sitting in her daddy's lap. She was an adorable child, with a twinkle in her eye, and a round happy face. To my right sat a woman with her strong voice lifted in song, clear powerful notes in a tongue strange to my ear, and my imagination turned to a very frightened mother who had faith enough to dare face the cold steel of Russian border guards with a cancelled bankbook. I thought of a young child with memories of a life of fear and anxiety who had blossomed into a beautiful gracious young woman, free of the horror and oppression of Communism.

And suddenly many things became quite clear to me. I realized that little Heidi, there on my left, was why we Americans were in Europe. I remembered the increasing number of times I had begrudged the big chunk that taxes took out of my teaching salary each month. Then I realized, more than ever, I believe, that we were buying freedom for children like Heidi with those taxes, as well as guaranteeing their continued freedom. This would be cheap at twice the price, in terms of taxes, bloodshed in Korea, or any other measuring stick we might care to use.

These few hours in L— brought about a change in both my wife and me that perhaps would never have come about in the States. I wish all of America could have been sitting with us in that small church today!

Today I met Heidi!

I wish all of you back home in the States could meet Heidi!

Perhaps it would do the same for you as it has for me, but, I'm getting ahead of my story.

* Millard Harmon (Alpha Lambda 524) spent the 1952-53 school year on leave of absence from the Newton, Massachusetts, public schools, travelling 30,000 miles in his own car in every country in Europe (outside the Iron Curtain) except Finland and Portugal.

"If you feel disposed to 'extract' the pertinent information from *NEA Research Bulletin No. 2*, Vol. XXXI, April, 1953, and write it up so that 'he who runs may read,' I believe the resulting article would deserve a spot in PHI DELTA KAPPAN," wrote the editor. The writer is thus merely the clarifier and abbreviator, no expert on salaries or salary schedules.—W. W. A.

Larger District: Higher Pay

By WILLIAM W. ARMENTROUT*

STRICTLY IN TERMS *of dollars and cents* the services of the classroom teacher in a community of from 2,500 to 5,000 persons appear to be of less worth than the services of the classroom teacher in some larger metropolis. Specifically, the median salary of classroom teachers in the nation's 18 urban school districts with populations exceeding 500,000 was $4053 for 1952-53. The median salary in urban areas of from 100,000 to 500,000 persons reached $3932 for 1952-53. The median salary for classroom teachers in communities of from 2,500 to 5,000 population was $3275 in 1952-53. Thus, the mythically "average" public school teacher in New York, or Chicago, or Philadelphia, or Los Angeles earns more than half again as much salary as does the "average" teacher in a "typical" small community of from 2,500 to 5,000 souls. In spite of this existing differential, the largest urban areas are reported as having less real advantage today than they had in 1930-31.

It would be difficult in a research bulletin to point up implications of this considerable discrepancy in salaries of public school teachers, apparently all doing more or less the same amount and type of work. Basically, the study clearly reveals a long-standing principle in American public education: *the median salary of various groups of teachers increases with the population of the school district in which the teacher is employed.* It is also pointed out, however, that a considerable amount of overlapping in the distribution of salaries does exist.

While the median salaries paid, as shown by the bulletin, are the highest yet reported, important implications of the study show:

(1) Teacher earnings, with rare exceptions, remain far below professional levels which preparation and civic responsibilities justify. It is cited in 1951, for example, the weighted average net income of dentists, doctors, and lawyers reached $10,123. Yet, the highest median salary reported for any group of urban classroom teachers in 1950-51 was less than $5,000. For the nation as a whole, the average classroom teacher earned about $3,000 in 1950-51.

(2) Salaries in dollars and cents have value in terms of what they will buy—*purchasing power.* A comparison of relative incomes of occupational groups, against either the 1935-39 or 1947-49 Consumer Price Index of the Bureau of Labor Statistics, shows teachers as a group to be below rather than above the average wage-and-salary worker in the United States. Furthermore, teachers as a group are reported to be less well off relatively than at the outset of World War II.

Salary Surveys by NEA

Every two years, since 1922-23, the Research Division of the National Education Association conducts a survey of salaries paid in urban school districts. The 1952-53 survey classifies six population groups of urban school districts and is summarized in part below:

MEDIAN SALARIES OF TEACHERS BY POPULATION GROUPS

Group number	*Population ranges*	*Number of school districts for 1950 population*	*Number districts reporting*	*Median salary classroom teachers*
I	Over 500,000	18	18	$4,953
II	100,000 to 500,000	124	113	$3,932
III	30,000 to 100,000	412	335	$3,898
IV	10,000 to 30,000	1,204	893	$3,615
V	5,000 to 10,000	1,222	798	$3,361
VI	2,500 to 5,000	886	490	$3,275

* William W. Armentrout (Delta 1342) has recently become Student Services Test Officer, California State Polytechnic College, San Luis Obispo, California.

In addition to the median salaries of classroom teachers, the study also presents tabulated data on median salaries of principals, superintendents of schools, and secretaries of schoolboards.

Twenty-Year Trends

General trends since 1930-31 show (1) a substantial rise in actual salaries paid to classroom teachers during the past 20 years; (2) the closing of a gap between median salaries of classroom teachers and administrators (in Group I [see Table] the median salaries of classroom teachers advanced 98.8 per cent while median salaries of supervising principals and superintendents did not increase by more than 76.7 per cent); (3) the closing of the gaps in salary among various types of classroom teachers (in Group I between 1930-31 and 1952-53 the median salary of high-school teachers increased 80.5 per cent while that of elementary-school teachers increased 100.1 per cent).

Administrative Salary Trends

Trends in the medians of principals' salaries have much in common with trends in the medians of classroom teachers' salaries. Briefly, during the past 20 years (1) the *per cent of change* upward has generally been greater in the small cities than in the largest cities, and (2) the *per cent of change* upward has generally been greater in the elementary schools than in the high schools.

In general, the per cent of change for superintendents has been less than for classroom teachers and principals. As with the other groups *the per cent of change* is generally larger in the small urban districts than in the largest centers.

The most spectacular advance in salaries pointed out between 1930-31 and 1952-53 has been in the median salaries of secretaries of boards of education. Based on the six population groups already defined, the median salaries for this group advanced in this manner: Group I from $6250 to $10,182; Group II from $4088 to $7188; Group III from $2514 to $5775; Group IV from $1250 to $3533; Group V from $558 to $2436; and Group VI from less than $500 to $1828. The per cent of change ranges from 63 per cent (Group I) to 337 per cent (Group V).

Salary Schedules

A final portion of the study is devoted to salary schedules for classroom teachers. The salient findings reported include:

1. Nearly all larger school districts employ a definite salary schedule. When districts of all sizes are combined, 94 per cent have a salary schedule. However, it is pointed out even a minority of 6 per cent of the urban districts which have not taken the basic step of adopting a salary schedule should give reason for concern, both in the profession and among laymen.

2. By inspection, a proportion of at least 98 per cent of the schedules examined were of the *single-salary or preparation type*. This is in considerable contrast to 1940-41 when only 31.3 per cent of the schedules were of this type.

3. The number of increments scheduled in the four-year or bachelor's degree class ranges from five in two schedules to 21 in one schedule. The median number at this level is 13 increments.

Local salary committees interested in evaluating the relationships in their local schedules as compared with national practice will find figures in the tables of this section of the study of possible help.

Regardless of the trend that lowest salaries paid groups of teachers (usually at the elementary school level and in the small towns) show greater per cent of increase between 1930 and 1952 than do salaries of other teaching or administrative groups, a general principle in American public education still tends to prevail: *The median salary of various groups of teachers increases with the population of the school district in which the teacher is employed.*

They Found a Way, a "fictionalized" report of the National Commission on Safety Education, contains helpful suggestions to all interested in elementary education. A second bulletin, *What About Their Safety*, explains the program of the Commission, and is free to teachers and administrators upon request. The address of the Commission is 1201 Sixteenth Street NW, Washington 6, D. C.

Are You on Borrowed Time?

Do you carry a membership card for the 45th fiscal year? If not, your membership is on borrowed time – your good standing expired on May 31, 1953, and your magazine address label is printed in green. Please note that the borrowed time will run out with the December issue of the magazine – unless your remittance reaches the Homewood office through your chapter, or direct, before the January mailing list is prepared on December 10. But don't wait until December! Why not write your chapter at once and remit to cover your dues for the current fiscal year? See back cover of the magazine for the chapter address – if memory needs refreshing.

What if Segregation Is Abolished?

The segregation cases now before the United States Supreme Court contain, perhaps the most explosive questions since the fateful Dred Scott decision of a century ago. Some of these questions are introduced, objectively and with good will, in this article. While elected school officials are understandably noncommital, they well know that the administrative problems involved in a decision ending segregation are enormous—whether non-segregation is accepted wholeheartedly or not. It is time, but not too late, for educators to discuss these problems *openly*, yet scarcely a line has appeared in the professional press. The matter is too important to leave to the politicians.

By R. RODERICK PALMER*

[Saving the souls of the "heathen Chinee" while neglecting the salvation of the neighbors, has been typical of the missionary complex of the American people. Thus we have observed the current preoccupation with questions of "academic freedom," discussions of which have surfeited the educational press, while the issue of segregation has been creeping upon us virtually unnoticed, or at least unmentioned.

Nevertheless, and without attempting to anticipate the Court's decision, and certainly without borrowing trouble in advance, it is safe to say that the approaching deliberations of the United States Supreme Court on the constitutionality of segregated schools, and on the "separate but equal" doctrine, will be watched closely by educators, by the American people, and by the world. Ironically, the constitutional amendments granting citizenship and voting rights to a former enslaved minority have never been tested, nor interpreted, as they apply to segregation in education. Segregation has long been an actual, accepted, fact in educational circles in 21 states—more than 40 per cent of them all—and it has been the practical rule in many communities in additional states as well. Vital questions other than legal are involved, and these must be considered as part of the total picture. From a purely educational standpoint, however, the following appear to be most pertinent.—Ed.]

WHAT ARE THE administrative problems always present in operating a dual school system, either state or local? What plans, or tentative plans, have been made, or are being made, for the administration of public schools in certain states in case the forthcoming decision of the United States Supreme Court should abolish segregation, either immediately or over a period of time? What will be the administrative problems in conducting America's schools on an integrated basis should the high court so rule? Whether integration is accepted gracefully or not, vast administrative problems are involved. To explore, to examine, and to weigh the facts these questions raise is to delve into the administration of today's schools in nearly half the states.

I. DUAL SCHOOL PRACTICES EXAMINED

A classic example of a dual school program, typical of many throughout America, is the District of Columbia system. In this city of more than 500,000 population, where school funds are appropriated through budgetary allocations by the Congress, the financial burden of maintaining two distinct school systems within one city with full administration of each, is stupendous. As reported by press and by school authorities in districts and cities where the dual system operates, the following ever-current problems continue to plague school personnel in charge:

Inequities in school building resulting from the rapid increase of school population of one race over another, and building programs thwarted by lack of

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appropriations, school bond financing, federal aid, building materials, and long-range planning.

Inadequate financial resources to maintain the dual system in the matters of operating funds, teacher salaries, research study, long-range planning. and annual school improvements.

Loss of competently trained personnel. Teachers are hired who are inadequately trained. The September 15 edition of the *Washington Post* stated that "the white schools have a high rate of temporary teachers (persons who have not taken the District teaching examination). About 30 per cent of the white elementary school teachers are on temporary status. There is a waiting list of qualified teachers wanting to teach in District Negro schools—but no money to hire them."

Overcrowded classes, part-time instruction, makeshift classes and the running of a large number of schools under capacity for one race while overcrowded classes prevail in schools of the other group. Class size ranges up to 50 pupils in such cases.

Transfer of school buildings to alleviate overcrowding promotes dissension and protest by parent groups. The nation's newspapers have reported such protests, strikes, and demands hurled at the District of Columbia school board as well as other school boards throughout the South.

Jealousies in the community. Both the white and colored groups tend to feel that the school board is spending too much of its money on schools for the other group.

Tensions among children. In many instances it has been shown that segregation increases distrust between white and colored groups.

No provision of schools for Negroes in sparsely settled areas.

Providing transportation for Negro children to consolidated elementary schools and to high schools. School busses are considered a part of the school program, segregation is observed, with added costs.

Pronouncements made by South Carolina, Georgia, and Mississippi in reference to the future of their schools have attracted attention of educators everywhere. Moves underway in other states, too, merit presentation here. There are a total of five segregation cases before the Court, involving elementary and secondary schools. Besides the South Carolina Case, the high court will consider cases from Topeka, Kansas, where high schools are already unsegregated; the Prince Edward County case in Virginia involving high schools; segregation in the public schools of the District of Columbia, and the Delaware elementary school cases.

Speaking before the South Carolina Education Association in March, 1951, Governor James F. Byrnes said, "Should the Supreme Court decide this case against our position, we will face a serious problem. Of only one thing can we be certain. South Carolina will not, now, nor for years to come, mix white and colored children in its schools." He and the governors of Georgia and Mississippi have declared the public school systems will be abandoned as they are now operated in case segregation is declared unconstitutional.

Twenty-One States Affected

If the court rules that segregation is dead, twenty-one states and the District of Columbia will be affected. In four states—Kansas, Arizona, New Mexico, and Wyoming—segregation is permitted. It is mandatory in seventeen others—Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Although most of the southern states are waiting out the decision of the Supreme Court, there are two which have taken definite steps to preserve segregation in their schools. They are South Carolina and Georgia. Both states plan to meet the challenge of a high court ruling against segregation, if such a ruling should come, by withholding funds from non-segregated schools. South Carolina amended its constitution in last November's election by a 2-to-1 majority to make the move possible, but the General Assembly must ratify the amendment to make it effective. So far it has not done so. Georgia's action, along this same line, in 1951, was legislative.

Just how these states will go about making education available to their white and colored students has not been revealed. Both have talked about turning the schools over to private operators. In Georgia, there has been mention of subsidizing individual students and letting them work out their own educational destinies. These states, too, according to newspaper accounts, are exerting great efforts to make their school systems conform satisfactorily to the "separate but equal" doctrine. For example, South Carolina has issued $75,000,000 in bonds to be retired by a 3 per cent sales tax, with issuance of new bonds permitted as earlier ones are retired. Georgia has launched a $175,000,000 program to build separate schools for white and colored children. Mississippi is planning school fund increases.

May Cost Billion to Equalize

The magnitude of financing "separate but equal" facilities throughout the South is indicated in the estimate furnished by the Southern Regional Council, a highly reputable organization serving the interests of better race relations in the South. It says that estimates of the cost of equalizing educational facilities in the public schools

of thirteen southern states run upward to a billion dollars. The Council's recently released pamphlet, *Questions and Answers: The Schools and the Courts* contains some conclusions. Three stated opinions follow:

1. A decision upholding the present doctrine of "separate but equal" facilities might cause such a heavy burden and tremendous financial strain that some southern counties, particularly where the Negro population is small, would voluntarily abandon segregation.

2. If the court outlaws segregation, the public school systems would not be transformed immediately, since the segregated housing arrangements found in most southern cities would lead generally to a school integration in the community as a whole.

3. State plans to evade a non-segregation court order by turning public schools over to private groups would probably be unworkable and would raise the following questions: Could tax funds legally be spent to support private, segregated institutions? What assurance would there be that children from poorer families would get an "even break?" And would good teachers be attracted to positions lacking public safeguards?

Evidence shows that school authorities are studying the findings and opinions of the Southern Regional Council and are making plans in accordance therewith, throughout the South.

In the northern states, where educational facilities are already largely equal as a result of integration of pupils and schools, problems exist other than those specifically treated here. These integrated schools in the North and West show vividly however, the democratic moves America has made in this area of school improvement.

II. SITUATION IN HIGHER EDUCATION

In higher education, court decisions have resulted in the admission of Negroes to such schools as the Universities of Arkansas, Texas, Oklahoma, Maryland, Virginia, Missouri, Tennessee, and North Carolina. The list of others now admitting Negroes and members of other minorities to various or all divisions is gradually increasing. This list includes Washington University in St. Louis, Virginia Military Institute, Virginia Polytechnic Institute, St. John's in Annapolis, Louisiana State, St. Louis University, North Carolina State, Delaware, Georgetown University, George Washington University, University of Louisville, University of the South, Kentucky, and West Virginia, as well as other colleges and universities.

Several cases before state and circuit courts now argue that Negroes should be admitted to the Universities of Florida, Georgia, Alabama and Georgia Tech. It is believed certain that a United States Supreme Court "de-segregation" decision will hasten educational opportunities in higher education for all citizens. Many educators are convinced, moreover, that should integration materialize, the most practical and workable place to start it is on the college or university level. They point to the success of the exchange student plan, carried on in the nation's leading white and Negro colleges since 1940, and to the reports of white and colored students working effectively together in the nation's integrated colleges and universities. Other proponents of integration say that it should begin in the elementary grades.

III. VIEWS OF SCHOOL ADMINISTRATORS

Questions posed to educational agencies in southern states respecting plans being formulated for the operation of schools in the event integration materializes, evoked many provocative and some noncommittal answers. Harold A. Haynes, first assistant superintendent of schools in the District of Columbia, replied, "As you know, the subject of integrating the public schools in the District of Columbia is one of the cases now being considered by the United States Supreme Court. The matter is also under study by our own Board of Education."

The Director of the Division of Negro Education in Arkansas, Ed McCuistion, made a statement strongly pointing out the philosophy and thinking of Arkansas educators and citizens:

"We are rapidly bringing our Negro and white schools into substantial equality along the lines indicated by policies adopted by our State Board of Education in harmony with Federal District Court decrees in two or three suits which have been tried in those courts. Our inequality lies primarily in the area of school housing facilities and in the area of salaries, equipment, and other operating budgets. There are some seventeen or eighteen million dollars differential in the first item and three and one half million in the second item, making a total differential of inequality of approximately twenty million dollars.

"In the climate of goodwill and co-operative endeavor now clearly present in this state we believe that we are well on our way to substantial equality at the earliest possible and feasible date – say three to five years at most. We have found that in the last two or three years we have made more rapid progress than at any previous time in our history. This is due principally to the fact that our Negro people are more eager for educational services of quality similar to that which has been developed for the white schools than at any previous time in our history, and that parallel to this increased desire has come an equal increase in the desire of the white school leaders and citizens to bring the Negro schools to full equality at the earliest possible date but to keep them in the present separate systems.

"If I may express my own judgment in the matter, so far as Arkansas is concerned, I very much prefer to accept local responsibility for wiping out all differentials rather than through neglect or by outside pressure to go into another period of coercion and interracial friction which breaking down of our dual school system by court decree would tend to bring into existence."

Hubert Wheeler, Commissioner of Education, wrote from Jefferson City, Missouri, "It has been our policy not to cross this bridge before we get to it. I think we shall not have the problem in this regard that some states will."

Assistant Superintendent Gordie Young of Kentucky declared, "I do not believe we have reached the point where we have tried to determine what the problems are that will face us. The (State) courts have ruled that all schools should be segregated. We believe that there are many sections in which it will make no difference and that they will take a few people into the schools without very much question. There may be some problems in a few sections."

Charles F. Carroll, State Superintendent of Public Instruction of North Carolina, said in part, "I sincerely believe my position on this matter is professional and in the best interests of our future in public education, whatever pattern that future might acquire. North Carolina has a remarkable record in providing educational advantages to all races and I feel we shall continue our pace."

Superintendent Carroll told Dewitt E. Carroll, *Greensboro Daily News* writer, "So far as I know, North Carolina will follow a 'wait and see' policy. The state has always come up with an intelligent and just answer to any question. My guess is that there will be a waiting period between the court decision and the formulation of a definite policy. The Governor, State Board of Education, Department of Public Instruction, and perhaps the Legislature would work on it." Governor Umstead has indicated that he will want to study the Supreme Court decision before making any kind of a statement.

Problem Small in West Virginia

Another picture, painted by State Superintendent of Free Schools in West Virginia, emphasizes the fact, "In some communities the problem will be small if integration comes. This holds particularly in the northern part of the state where the pupils will be admitted to the regular white schools without much question and with but little criticism. In these cases, most of the Negro teachers are likely to remain employed. The problem will be more difficult in the southern part of the state which has the major Negro population, and in which communities school buildings are already congested. The problem will be lessened very materially if white and Negroes are willing to permit a gradual integration of pupils to the respective schools."

In Virginia, Superintendent Dowell J. Howard declared, "I do not desire to anticipate any major problems and no plans are afoot based on the possibility of the Supreme Court ruling. Virginia is involved in this case and until such time as our Constitution is changed we shall continue to operate in accordance with our present plan."

Stating his own views, interestingly contrasted with those of Governor Byrnes quoted earlier, C. B. Seaborn, Director of Division of School Administration and Finance in South Carolina, proclaimed, "We have, of course, done some thinking as to what might happen depending on the type of decision the Supreme Court renders but that is as far as we have gone. We cannot say what would happen in this state. Legislation would be in the hands of the General Assembly and we cannot anticipate nor make any plans on what that might be."

Situation Easier in Western States

"Your letter addressed to the Superintendent of Instruction in Alabama has been referred to me to answer. There will be definite and positive resistance to a program of integration of schools if demanded by the Court, and which will be impossible to overcome in many of the school systems in our state unless a considerable period of time is given to allow for gradual evolution of such a program of integration," wrote J. C. Blair, Director of Division of Education for Negroes in Alabama.

The Director of Administrative Services in Texas, Bascom Hayes, said, "In regard to administrative problems and plans, these are under study by the staff of the Texas Education Agency at the present time."

In Kansas, it was felt that any decision of the Supreme Court on segregation is not likely to affect the school situation to any great extent. Kansas law permits boards of education in cities of the first class to segregate. "However, a majority of these cities have already abandoned the practice," volunteered Kansas Superintendent of Instruction, Adel F. Throckmorton.

In Arizona all but two of the fourteen counties have integrated schools and all schools and pupils in its largest city, Phoenix, are fully integrated in every respect, a report from that state revealed.

In a mid-western state where dual systems no longer exist, a report reveals that the major problems evident were that a number of the Negro

teachers could not be absorbed easily, and if they were not on tenure, their position was at times abolished; secondly, some Negro communities petitioned to keep their own schools with most of the children attending them under their regular teachers. They seemed to want the *right* of attending the other schools far more than they wanted to attend the other schools. This state, in outlining the scheme used in integration, gave as a solution this method: "We integrated our schools gradually, beginning with the first grade the first year, the second grade the second year, etc. At the same time, we began the process of integrating the secondary schools. The statutes made the problem one of local administration. As a matter of fact, it was a problem in only a very few of our many communities."

IV. PROBLEMS OF INTEGRATION

Should the Supreme Court abolish segregation, administrative problems in conducting integrated schools in all seventeen of the twenty-one states will be complex. In a survey on school planning in various states, made by the writer, the following questions being studied by school boards, superintendents, and laymen were considered most important:

How can each group, white and colored, be helped to accept the other?

How can unfortunate incidents which would arouse the two groups be avoided?

How can colored teachers be reassigned and distributed? Will a large majority of the whites accept colored teachers for their children?

How rapidly should the transition be made?

What can be done about sending white children to inferior school buildings used by colored children in the past?

How will the problems of discipline be met?

What difficulties will transferral from one district to another entail?

What will be the programs of human and public relations in breaking down prejudices on the part of both races?

What will be the action taken by various southern legislatures and how will these moves thwart or promote the advance of the educational movement in America?

Thomas D. Bailey, State Superintendent of the Department of Education at Tallahassee, Florida, in his views on the matter, said, "All states, counties, and communities have problems of great variation and differences. These problems are usually related to social and economic forces which influence legislation, appropriations, governmental organization, and school administration. However, from our experience in Florida we have learned that good public relations are indispensable in the administration of any school, county school system, state school program, or any other public service agency. I believe that this need would be common to all situations regardless of local and state variations."

Rural Areas Cause Greatest Concern

Administration and staffing of school systems can be expected to become more complicated and vexatious should the high court abolish segregation. Officials doubtless would find complaints multiplied to the point of exasperation. Some schoolmen foresee a reduction in the number of Negro school teachers should segregation be banned, and the teaching profession now offers one of the broadest opportunities to Negroes in the South. It is also fair to ask whether a good many white teachers would decline to teach in mixed classrooms. The big problem, however, will be the surface planning for and integration of the races into a single education system. In addition, it might be observed that a de-segregation decision would have its primary effect upon the rural rather than the urban areas of the South. The urban communities could, and probably would, solve the problem by the easy expedient of first "gerrymandering" their school districts and then requiring students to attend school within the district in which they reside. This plan, already in effect in many large northern cities, would be rather simple to impose since most urban Negroes and other minority groups already live in well-defined and separate sections. In the rural communities, however, the pattern of living would make the "gerrymander" practically impossible. And it is in the latter areas that the intensity of prejudice and adherence to ancient attitudes is probably strongest. Herein, I believe, lies the crux of the entire problem. Studies and contacts definitely show that many schoolmen of both races understand the ticklish nature of the situation they may be called upon to face and to help deal with. Other evidence indicates that they are devoting ample thought to how a solution can be worked out and applied with caution and moderation.

A new motion picture titled "Arts and Crafts of the Southwest Indians" has just been released by the Santa Fe Railway. A color production with sound commentary, this film brings to the screen the story of today's Indian artisans. Prints are available on a free loan basis for showing to civic clubs, church groups, employe associations or schools. Requests should be addressed to the Santa Fe Film Bureau, Room 512, Santa Fe General Office Building, Topeka, Kan., or your nearest Santa Fe agent.

Not the Last of a Hardy "Breed"

Modern science is made to order for the Realist. Scientific inquiry lies at the very base of the Realistic philosophy. The use of scientific measuring devices in education, for example, the use of standardized tests, the use of research in curriculum building, all these fit the Realistic framework.

By DEWAYNE B. JOHNSON*

A FEW MONTHS before he died on May 16, 1952, Frederick Stephen Breed, associate professor of education emeritus of the University of Chicago, wrote to the author from his personal retreat, Dune Acres, in Chesterton, Indiana. He said: "Realists find it impossible to believe that 'we make our world and when we die we take it with us.'"

In this single sentence he took issue with the Aristotelians, the Idealists, the Scholastics, and the Pragmatists.

Breed's letter to me, then a student in a seminar devoted to the philosophy of education, was perhaps his last attempt to give an explanation of the role of Realism as a school of philosophy in the modern world. Realism embraces and encourages scientific inquiry in a manner not easily supported by other philosophic viewpoints. In a world of science, Breed's hardy "breed" of philosophy is likely to survive.

A search into the history of 1953's Realism will reveal hazy origins, the most precise of which might be the "materialistic realism" found in 19th century England. There the tendency was sometimes to term it timidly—"naturalism."

Long before this "materialistic realism" however, a Greek, Democritus (c. 460 B.C.) taught the elements of Realism and developed the original atomic theory! He was shouted down by other philosophers on the order of Socrates, Plato and Aristotle and his theories on the atomic nature of the universe were lost until the Mid-Twentieth Century.

The greatest contribution of England's "materialistic realism" was in opening a scientific era led by such men as Darwin, John Stuart Mill, and others. New Realism, on the other hand, is largely American in origin and this is the Realism supported by Breed. Sub-species of Realism such as "critical realism," "scholastic realism," "organismic realism," "naturalistic realism," and others contributed to the formulation of Breed's Neo-Realism or New Realism as he described it in his book, *Education and the New Realism.*

Education and the New Realism

The reason for Breed's unique position in the Realistic school of philosophers, might be provided in his chapter, "Education and the Realistic Outlook," in the 1942 *Yearbook* of the National Society for the Study of Education.

Breed said, "One of the first questions my 'fratres pedagogical' pose, after noting my enthusiasm about something that has been a matter of no considerable moment in their academic lives, goes like this: 'Now, exactly what, in a few well-chosen words, do you mean by Realism?'"

Breed went on, "One of course does not venture to comment in their presence on the general prevalence of philosophic illiteracy, or to suggest that a professor in an institution of learning might expect his colleagues to read his books.

'Why bother with books,' might come the embarrassing rejoinder, 'when everyday familiarity with the author has already advertised both his intellectual limitations and his perversities?'" Therefore, with visible impatience, Breed set to his task of patiently undertaking to do in a few pages what others have attempted to do in volumes of print.

Breed said, "*That philosophic study is a venture in futility* is one of those traditional slants that lingers on without analysis and outruns whatever usefulness it ever had. It is now definitely yielding ground to intelligent insight, for any competent observer should sense the tre-

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mendous part that ideologies of various kinds are playing in the contemporary world." He goes on to support Realism as being a philosophy which gives scholars the best pedestal from which to view modern life—the atomic age if you will.

It is at this point that he takes Professor Reisner[1] to task, saying:

"Professor Reisner takes a different view of the relation between education and philosophy. His historical overview in the Forty-first Yearbook (N.S.S.E.) has had the effect of an icy shower on the chapters that followed his. It is his thesis 'that one would have difficulty in establishing a unitary relationship between any given metaphysical position and the educational consequences which are ostensibly drawn out of that metaphysical position.' It is a defeatist attitude toward the philosophy of education. . . ."

Not a Defeatist Philosophy

Those acquainted with the writing of Professor Breed know that Realism is anything but a defeatist philosophy. With its Principle of Independence, it is a philosophy which is ever seeking to expand frontiers of knowledge. The principle of independence is incorporated in the statement quoted earlier in which Breed told his attitude toward the effect of a man's death on the nature of things.

The Principle of Independence implies simply that something may exist and yet not be known. In addition, this something which is not known is not necessarily comprehensible to us in terms of something which we know—it is not to be confused with "matter." The Realist believes implicitly that the world is not capable of being totally understood and hence there is always something to be learned.

Under Realism, science has its ticket for destinations unknown!

It is presumptuous to try to capsulize any philosophy or the thinking of any one philosopher in a few paragraphs. It may be enough to suggest the fact that the New Realism of Frederick S. Breed is not likely to die an early death in the Twentieth Century.

Is It Compatible?

A Twentieth Century question might be posed for Professor Breed—"Is Realism a Philosophy of Education compatible with the Atomic Age?"

Breed's answer was included, for the most part, in the letter mentioned earlier which he wrote the author:

"Your request for an assist from an old pro in educational theory has just been received. . . .

". . . I see nothing in the recent discoveries of nuclear physics that is incompatible with a truly realistic philosophy. Realism easily takes such discoveries in stride. Its fundamental assumption is that things can be without being known, and that therefore knowing is a process of disclosure rather than creation. Realism is not alarmed at finding such new objects as mesons, neutrons, and positrons. It is open-minded toward the newly and externally given, and is always ready to adjust its perspective to such facts and their social implications. Above everything else, it is scientific in attitude. It rejects the theory of 'creative intelligence' that ran wild in education during the Twenties and Thirties, a theory now seldom acclaimed by educational leaders. This theory will be allowed to die a natural death by all who disavow the idea that objects of knowledge are the creations of intelligence.

"Realists find it impossible to believe that 'we make our world and when we die we take it with us.' They believe, rather, that man could be entirely erased by bombing or otherwise, without appreciably disturbing the physical world. They believe that this physical world is a tough and resistant thing with which we must live, to which we must adjust. The demands of this external world of physical and personal objects are the foundation of that which goes by the name of discipline. So the realist has discouraged the notion that the sanctions of right behavior are entirely within the individual and that one best guides one's life by following one's heart's desire. Hearts' desires sometimes need revision. While he recognizes the importance of individual values, the realist also calls insistently for the recognition of social values, the recognition of common objectives in education. This, too, is now the position of the leading organization of progressive education in America. I refer to the American Education Fellowship. This, bear in mind, is a significant change from the extreme individualism of an indulgent activity school and its indefinite aim of growth.

"In the atomic age, in every age so far as one can forsee, realism will face the future with fortitude and the hope of happiness. It puts its faith in freedom as the supreme democratic value. It accepts Toynbee's theory of challenge-and-response, which means that the communist challenge must be met with democratic determination and atomic power, for it knows that values aren't self-sustaining. They sometimes have to be sustained. . . ."

[1] Edward H. Reisner, of Teachers College, Columbia University.

The primary assumption of Realism may be termed the Principle of Independence. This means simply that, in this system of thought, things may exist, can be, without being known. The Realist points out, as science seems to teach, that a vast universe of "somethings" existed in fact or in principle for billions of years before man appeared on this particular particle in that universe. The Realist further points out, again quoting Breed, "that this universe could wag along quite comfortably, were man to disappear completely."

A Philosophy Humble, But Bold

In contrast is John Dewey's theory of creative intelligence in which an act of knowledge is a creative act—or, more precisely, an idea is a plan of action which, in operation, is *instrumental* in producing its object. Hence, the term instrumentalism.

The Realist cannot follow the rationale of such a statement. He reacts much as Santayana did when he said:

"This result is consistent with the general principle of empirical criticisms by which we are forbidden to regard God, truth, or the material cosmos as anything but home vistas. When this principle is applied to such overwhelming outer realities, it lightens the burden of those who hate external compulsions and supports; they can thenceforth believe they are living in a moral universe that changes as they change, with no sky lowering over them save a portable canopy which they carry with them on their travels."

A similar figure of speech was employed by Breed in developing the same point: "Or, like one of those interesting fishes that creates its own illumination in the darkness of the ocean's depths, the instrumentalist moves about in his little globe of light, as if nothing dwelt beyond, as if he even manufactured what he experiences."

The extension of this figure of speech to other schools of philosophy is made obvious by what Breed has said before. The Idealist, too, would be a self-illuminating species of fish, who is willing to accept what he sees and mull it over introspectively within his fish-like brain and going beyond that brain only to seek contact with an ultimate being.

Realism, it is apparent, is opposed to superstition. It does not, however, deny a place to religion in the world. Its attitude toward superstition is most valued in education where the current view is that much is to be gained by experimentation, verification, interpretation, and perhaps, generalization when justified.

The Realist sees the totality of the universe as beyond the powers of man to know; the most he can achieve is a bare knowledge of some of its secrets and an ability to use some of its forces. It is a humble philosophy—and yet it is bold and self-sufficient.

The world's only complete collection of Milton first editions was presented to the public during October, by the University of Illinois Library. Acquired for the University in the relatively short span of 25 years by the eminent Milton scholar, Professor Harris F. Fletcher of the English department, the collection is designed for use, not display. The present exhibit of 75 items, containing all the first editions, the poet's signature, and a book which may have once belonged to him, includes examples of research studies produced at Illinois.

In 1926, when Professor Fletcher joined the Illinois faculty, the University owned only a few scattered items, and no first editions whatever, from the works of the great poet who ranks with Shakespeare in English literature. This spring, with the acquisition of a fine copy of the small pamphlet "Of Education," Professor Fletcher completed the collection. While collecting these, he also obtained for the Library copies of all later editions published during the poet's lifetime, and which he may be presumed to have supervised personally.

He says he's just out looking for certificated teachers.
—CTA Journal

Is Scientics Over-Emphasized?

Instead of football, on the crisp October days of the future, there is Scientics. It began as a game, according to the historians. It began idealistically as a competitive exercise of the mind. Somewhere a small group of bright young men, blessed with leisure time, developed the basic rules, organized the original teams, and played the game for amusement. Later the name "Scientics" was adopted, the rules modified, teams recruited, and the amusement factor seriously curtailed.

By ROBERT G. PORTUNE*

FROM THE BEGINNING, the game of Scientics demanded certain fundamental qualifications of its participants. High mental ability was a necessity, as was the ability to retain vast quantities of scientific data, skill in research methods, and an exceptionally rapid reading rate. For some positions on the successful Scientics team a keen, analytical mind was required; at other positions abstract theorization was a tremendous asset. Coordination and teamwork were developed to a high degree through practice.

The game of Scientics itself can be described briefly. Played on the fields of huge stadiums throughout the country before tens of thousands, the game is now a familiar part of the life of every red-blooded and gray-celled American. There are few among us who have not witnessed a Scientics game. Consisting of a 60-minute test of scientific knowledge equally divided into four distinct quarters, Scientics is a contest of the mind. Administered by appointed officials to members of two teams representing colleges, high schools, or professional organizations, these tests have become the recognized "American game." And the recognized American heroes of the world of sports are, logically, the Scientics team members, varsity and substitutes, whose scientific training has made them outstanding examples of the game at its best. Broken down into positions, the Scientics team possesses two mathematicians, two chemists, two physicists, and one expert on nucleonics. To become a varsity player is the ambition of every American youth.

Youth is not alone in its love for the game, however, for who among us has not thrilled with inexplicable emotion as the Scientics teams come onto the playing field of our own institutions and take their places at the tables set on either side of the playing area. Attired in the brilliant colors of their respective alma maters, the varsity members tensely begin adjusting their individual microphones for volume, begin sharpening their pencils and arranging their papers with swift, practiced movements. The bands fill the autumn air with stirring music, while the cheers roll from the packed grandstand; the substitutes take their positions on the long benches behind the tables, and the cough of motors can be heard as the team managers warm up the bookmobiles in anticipation of the first time-out.

Now the game officials come onto the field, carrying the sealed envelopes containing the four quarters of the test. Captains of both teams meet with the head administrator to determine who is to be given the opening question. The captains return to their tables. An expectant hush falls over the entire stadium. And then suddenly, always surprisingly, the first question of the first quarter comes booming from the loudspeakers.

Only a Game, But—

It is only a game of mental skill. It is only a part of the educational process—colorful, stimulating, above reproach.

The varsity mathematicians are expert at their positions, and well might they be. One of them was discovered by a loyal alumnus at a small high school in New England, where his I.Q. was recorded as one of the highest in that section of the country. Another is a local boy who stood in the top 2 per cent of his high-school graduating class. Both are seniors in the university. From

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four o'clock in the afternoon until seven o'clock in the evening each weekday they practice mathematics under the supervision of a highly paid mathematics coach. After practice each is given a set of formulae to take to his dormitory to study. As a team member each boy is well equipped with slide rule, drawing instruments, and research material. For three years, both boys have attended spring practice, consisting of 18 hours of mathematics practice a week, and summer training, consisting of two periods daily of intensive study and application of the principles of higher mathematics. Now, in their senior year, these boys are living, breathing, and eating mathematics, and are considered expert enough to be given assignments with the varsity. Working in conjunction with the other members of their team they are well prepared to lay the mathematical foundation for the solution of problems proposed during the 60 minutes reserved for Scientics on 10 succeeding fall Saturdays.

High Foreheads and Thick Lenses

In a similar manner the chemistry, physics, and nucleonics positions have been filled by specialists recruited from all sections of the country and trained to razor keenness by their coaches. Drilled and re-drilled until speed and accuracy in their own specializations are second nature, the members of a good, "big time" Scientics team are the cream of American youth.

Physically, of course, they are apt to be neglected. High foreheads and thick-lensed spectacles are becoming more and more the identifying mark of the Scientics player. As a group they are susceptible to colds, are short of breath, and are underweight. During a game, or during a practice session, injuries are bound to occur. These are of the expected kind: hysteria caused by mental strain is common; and complete breakdown of the nervous system is not unknown. Severe eyestrain and headaches have been experienced by every veteran team member. There have also been cases, fortunately rare, in which the mental condition of a player has required institutionalization. A trained psychiatrist, therefore, is in attendance at all games.

On the campus of his university the Scientics player is, rightly, a hero to his classmates. In the local newspapers his correct score percentages are listed weekly, and outstanding players and teams receive national recognition and adulation. At the conclusion of each season writers from newspapers and magazines from coast to coast select a team as national champion, and these same writers choose seven individual players as the greatest in the country.

Scientics, in the present day, has become "big business." It was inevitable that it would. There is, first of all, a great popular appeal in the meeting of superb minds, an appeal that causes spectators to pay money to watch a game. As a competitive sport, Scientics has no equal. But beyond the revenue from tickets there is a more lucrative attraction, for Scientics has for many years been important in the plans of government and industry. With a concentration on science such as never before experienced in history, the game of Scientics has become the basis for research and building grants to colleges and universities. To the university capable of producing a winning team goes the money for a new cyclotron, for a research library, for a physics building, or for a cosmic ray expedition to Mt. McKinley. Compared to these vast sums, the profit made at the ticket windows is minute, though sufficient to provide for team, coaches and equipment, the band, road trips, and support of minor sports.

The organization, whether industrial or governmental, that provides the grants also provides the test to be administered. Thus, theoretically, these sums of money are open to competition everywhere. But, practically, the juiciest plums go to the institutions with a big-time program of recruitment and training. The multimillion-dollar grants, therefore, are never at stake in a small-college Scientics game, and there are even several obscure schools which still engage in the game for fun.

"Overemphasized" Say Physical Directors

Recently, critics of Scientics have been uncovering some unfavorable aspects of the game. In certain large universities, it has been noted, overspecialization has been growing. Chemistry positions, for instance, are no longer the responsibility of single varsity team members, but are often four and five deep with organic men, inorganic men, periodic table men, and the like. A good nucleonics man is the dream of every coach and alumnus, and there are more and more rumors of fabulous inducements being offered to get such young men on certain campuses. It is also true that during the regular season scores are sometimes predicted, odds are made, and gambling ensues. But the greatest hue and cry against Scientics seems to be coming from scattered groups of serious-minded individuals who are beginning to wonder aloud if there are not certain evils in a sport that demands so much time and training in only one specialized field of endeavor. Especially among directors of physical education is found a growing belief that Scientics is *over-emphasized.*

Closed-Circuit TV Is Ready for You

By PHILLIP LEWIS*

Definite teaching procedures, meeting at least some of the criteria proposed by Schreiber (see April, 1953, PHI DELTA KAPPAN), are described in this article, procedures quite different from general telecasting. It is now evident that closed-circuit TV presents educators with a powerful, supplemental teaching device.

CLOSED-CIRCUIT TV offers an immediate and wonderful challenge to all concerned with effective instructional procedures. It was not possible to make this statement a few years ago although camera chains were available then. Prices discouraged a second look. Commercial television cameras now cost somewhat less than half of the $25,000 which formerly was the asking price. However, a revolution has taken place in this field with the perfection of small but highly sensitive cameras and other electronic tubes. This advance made practical the production of lightweight and compact cameras weighing approximately 20 pounds and costing but a small fraction of the price of the larger prototype. The appreciable reduction in cost gives the "television eye" a place in the kit of teaching tools.

Unusual Equipment Employed

Chicago Teachers College, in implementing plans to investigate the potentialities of captive television for teacher-training purposes as well as general education applications, selected the Dage Television Camera for the experiments. This product was chosen because of its physical size (slightly larger than a shoebox), its light weight, the fact that all of the synchronizing generator circuits are built into the same cavity occupied by the camera unit, the circuits are compatible with existing standards of television transmission, with the added convenience of having a built-in kinescope for monitoring and framing the image. Some of these features are usually found only on the more expensive models. This TV camera is also equipped with a revolving turret accommodating closeup, medium and telephoto lenses. Even an interchangable zoomar-type lens is available for special applications. All of these optical attachments have adjustments for both focus and light control.

It is possible for the camera to be cable-connected to as many as ten conventional television receivers for the simultaneous reproduction of images. Receivers can be located as far away as 500 feet from the camera and can be placed in several different rooms or locations. This distance limit may be extended through the use of inexpensive booster units. The connecting coaxial cable is of the garden variety, ordinarily used as antenna lead-in, and carries signals of such a nature that conduit and special housings are unnecessary even for permanent installations and will not conflict with electrical code restrictions.

Because of the ingenious design and the resulting sensitivity of the electronic circuits, it is possible to use the camera to pick up images in locations having as little as 50-foot candles of illumination. Optimum reproduction, however, is obtained where the light level is as high as 100-foot candles. Significantly, it is unnecessary to use floodlighting or other special sources if ordinarily good classroom illumination is available.

Sound originating at the camera location can be transmitted over the same coaxial cable described previously through the use of an Audio-Mixer Unit. This item has the same physical dimensions as the camera and is mounted conveniently on the dolly base supporting the camera tripod. The camera output cable and the microphone cable are both plugged into the Mixer as well as the long connecting cable from the receiver(s). Thus the video and audio signals are combined for transmission to the terminating sources where they are translated into sight and sound as in conventional television programs.

For specialized video applications, involving the necessity of two-way communication between the camera location and the classroom in which the receiver is placed, an intercommunication system substitutes for the Audio-Mixer Unit. This allows members of a class observing a video pick-

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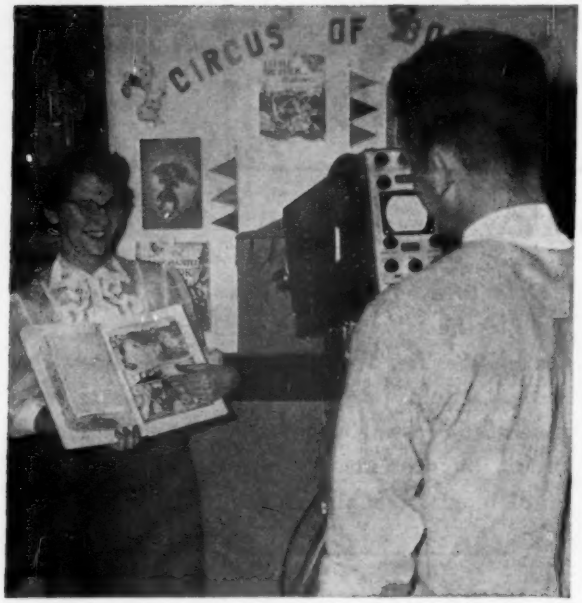


Trainees Learn to Tell Stories Before the TV Camera.

up to ask questions and have them answered while the transmission is in progress.

A simple screw adjustment inside the camera housing determines the channel setting of the signals to be transmitted on the coaxial cable. A channel frequency is selected from among those not used by telecasters in a given locality. If, for example, channel 3 is designated, then it is necessary to manipulate the channel selector switch on the receiver to setting 3 to tune in the captive signal. This feature provides an inexpensive arrangement for using two cameras simultaneously without the necessity of purchasing separate video switching units. The cameras are positioned to pick up images from different vantage points and once adjusted, can be left unattended for as long as is necessary. Camera 1 is set to channel 3 while Camera 2 is tuned to channel 5. At the receiving end the transmissions can be alternated on the viewing screen by changing the setting of the channel selector switch.

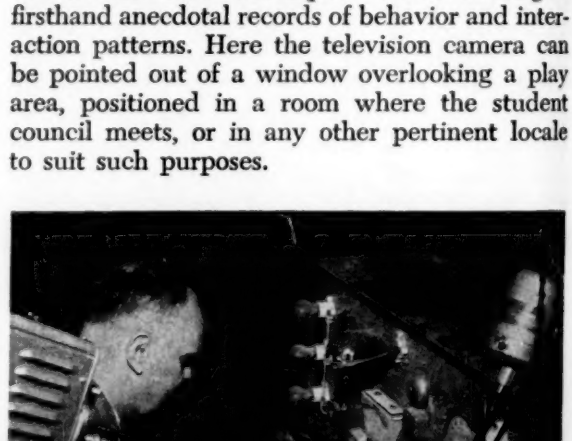
Utilization Potentialities

It is still too soon to say with certainty which closed-circuit techniques are valid for educational purposes and this report attempts to do no such thing. Widespread and intensive inquiry and trials over a prolonged period will give these answers. However, a recital of the experiments attempted as well as the new ideas and avenues opened up by these initial trials may be of help in widening the scope of thinking and endeavor in this area.

Many occasions arise in the shops and in the laboratories where demonstrations of operations or processes are presented which involve tiny parts or objects. Ordinarily the instructor must repeat the activity several times to small segments of the class, or attempt to put over the lesson in a single, optimistic presentation, hoping that other than those students in the front row will get full benefit from his efforts. Internal carving in plastic, throwing ceramic shapes on the potters wheel, dissection of hearts, lungs, or other vitals, explanation of small-scale models and specimens are but a few of the many items difficult to show to sizable groups. However, with a large-screen television receiver strategically placed in the classroom, students can watch electronically enlarged and brilliant images which the camera eye picks up from a ringside position.

An essential facet of a teacher's preparation is good grounding in counseling and guidance techniques. Background material can be dealt with in the classroom, but actual implementation of these approaches is almost impossible to demonstrate before large class groups. With the TV camera and microphone placed inconspicuously in a corner of the counseling office, trainees stationed before a TV receiver in a nearby room can watch the specialist in action. Thus, rapport is not disturbed and a valuable experience is available for sharing by as large an audience as desired.

A related area of teacher preparation is concerned with the observation of children at work and at play. This permits the application of some of the sociometric techniques and the making of firsthand anecdotal records of behavior and interaction patterns. Here the television camera can be pointed out of a window overlooking a play area, positioned in a room where the student council meets, or in any other pertinent locale to suit such purposes.



Industrial Arts Instructor Does Internal Carving in Plastic While Class Watches From TV Screen.

TV Camera Is Directed to Give Close-up of Type Held in Composing Stick During Printing Demonstration, for the Benefit of Those in the Back Rows.

While many principles apply in general to all teaching-learning situations, there are certain special areas requiring highly specialized techniques. Superior teachers observed in action in regular school situations by the television camera makes it possible for the teacher-trainees to observe theory applied in practice. Conversely, the novice teacher facing a class for the first time can be observed by counselors as well as by the rest of the trainees with less tension and strain resulting through closed-circuit television.

Projection television receivers are now reasonable in cost and capable of throwing large pictures on conventional motion picture screens. This makes it convenient for hundreds of viewers to follow the action on a single screen. The television camera can just as easily be connected to this type of receiver to effect a closed-circuit chain. In some schools the auditoriums are not sufficiently large to accommodate the parents and friends who would like to attend graduations and similar important functions. It is possible now to seat overflow crowds in gymnasiums or study halls. With the TV camera following the action, the extra guests may watch the proceedings on projected television. This technique can be applied during swimming meets, diving and first-aid demonstrations, athletic contests, music festivals, etc., to gain the facility of wired television.

With the rapidly expanding construction of new educational television stations, it becomes even more essential that schools learn to deal with the programming end of video. A simple closed-circuit chain with one or two cameras can be used for effective orientation to production procedures as well as for rehearsal equipment in connection with actual programs to be aired at a later time.

The employment of a double-ended shadowbox containing a pane of finely frosted glass (9″ x 12″) provides an additional TV facility. The images from a filmstrip, opaque, or overhead projector may be focused to fill the glass surface exposed on one side of the shadowbox. The TV camera is adjusted to pick up the image as transmitted through the glass to the other side of the pane. In this way mounted pictures, slides, transparencies or filmstrips can be sent out over a television chain. A special motion picture projector is also available for this application, but its cost is roughly twice that of an ordinary machine. However, the possibilities open up new vistas of investigation.

Closed-circuit television is practical for instructional purposes. It will not necessarily revolutionize teaching, but it must be considered as another valid aid to be utilized where it can be found to do a job better than other means.

A Bill of Rights for Student Teachers

By J. MARTIN TAYLOR*

This modest, but significant contribution to teacher education may help in creating conditions more favorable to teacher recruitment and retention. Ten "Rights" are listed.

BILLS OF RIGHTS have an abiding and profound place in the hearts of men. From King John's capitulation on the banks of the Runnymede in 1215 through the French Rights of Man in 1789 such declarations have been political in nature and have had their origin in the minds of the would-be recipients of such rights. Our American Bill of Rights of the crucial revolutionary era was no exception.

Since World War II a bill of rights has served the "G.I." well, and is rapidly becoming an American institution. But the nature of the term has changed. No longer is it characterized by an origin based on agitation. This is significant, it points up the progress we have made in moving from revolutionary to evolutionary processes. Jones' Bills of Rights for School Administrators and School Board Members are not a result of clamoring by the members of those respected bodies. Schorling's Bill of Rights for Teachers, and Andrews' Bill of Rights for Supervising Teachers are both undoubtedly the result of foresight and educational statesmanship; but has the pendulum swung too far? The change in method is good, the change in origin is probably unwholesome. We find rights being handed down to groups whose membership should have an active and direct role in developing them.

It is certainly significant and school people should be concerned with the fact that throughout an earnest movement to improve schools in general and teacher education in particular, the last bill of rights to appear is that for student teachers—the very people for whom the entire teacher education program exists! It is late enough to suggest a bill of rights for them. The following rights are well rooted in psychological principles and provide implications for the administration of teacher-preparation programs.

1. *The right to be wanted.* Never should a student teacher be assigned to a supervising teacher who is unsympathetic or "lukewarm" to teacher education in general or to student teachers in particular.

2. *The right to choose.* Some degree of choice should be allowed student teachers in the supervising teacher with whom they will work and when practicable, in the location, size, and type of laboratory situation.

3. *The right to readiness.* Having met the requisite professional courses is not always assurance of readiness to teach. The student teacher has a right to some assurance of success before he is placed in a teaching situation.

4. *The right to adequate and varied experience.* Not only should the classroom experiences be rich and varied but the student teacher is also entitled to an adequate sampling of extra-class and extra-school experiences of the type and nature in which he will be expected to engage as a full-time teacher.

5. *The right to an accounting.* At regular intervals the student teacher should have an evaluation of his teaching. Such appraisals should be frank, businesslike, and constructive.

6. *The right to a reasonable load.* In fairness to himself and to the public-school pupils whom he teaches, a student teacher should have the right so to schedule his work that he has ample time for his laboratory work.

7. *The right to transportation.* When the laboratory is off-campus and commutation is necessary, the student teacher has a right to expect that convenient and comfortable transportation be provided.

8. *The right to professional guidance.* The student teacher has a right to frequent individual conferences with both the supervising teacher and the institutional supervisor for planning work, for discussing observed lessons, and for problems incident to teaching.

9. *The right to professionalized instruction.* In professional and academic preparation the student teacher has a right to instructors whose methods of teaching are exemplary of those he is expected to use.

10. *The right to share in evaluation.* As a culmination of his regular self-evaluations the student teacher has a right to participate in the final evaluation of his laboratory experience.

* J. Martin Taylor (Beta Delta 240) is Professor of Education, Fairmont State College, Fairmont, W. Va.

Beyond the Far Horizon

By ANDRE ROSOWSKY*

Operation "Melting Pot" did an unusually fine job on Andre, even though he is greatly gifted. The development of just one such boy justifies a lifetime of teaching.

WE ARE CELEBRATING today an occasion filled with solemn tradition and personal meaning. Our graduation is more than a tedious ritual, for behind all the pomp and circumstance there is a genuine emotion—our ardent joy of living. Dynamic changes are being wrought in each of us: our physical and mental powers are maturing; our personality is crystallizing; our individuality is emerging. We aim to be responsible adult citizens of our community, our country and our world. Ours is a truly difficult mission, but we look forward with hope and confidence to a better, brighter day. In short, we have reached the focal point of our high-school education, a moment whose significance inspires us to reflect both upon our four years at Beverly and upon our future, wherever we may be.

We have in these four years received extensive instruction from a most competent and efficient faculty. The best elements of modern education have been at our disposal. We have been taught objectivity and emotional control. We have been inculcated with rigid concepts and precise definitions. But the school is more than an agency for the orderly transfer of knowledge from book to brain. Thus, our education has consisted largely of actual performance; for this we are grateful.

Mankind is presently embarked upon the most dramatic and hazardous period of its history—the Atomic Age. American initiative has built up a truly stupendous technological civilization. We dwell in a world of clattering streetcars and towering skyscrapers, of grinding gears and screaming jets. Our skies are crimsoned by the glare of distant battlefields. At night the fumes of our factories hide the very stars. Meanwhile, hunger, poverty, disease, and oppression plague our fellow men. Fear and anxiety prey upon the souls of countless millions everywhere. And in the midst of all this wretchedness and terror, we soar to ever greater heights of mechanical perfection. We rush about distractedly—turning the wheels of industry, setting new records of speed and production, erecting ever larger architectural marvels; and when at last we near exhaustion, we seek various forms of relaxation, each more ineffectual than the preceding; and in this frenzied race with Time we pause only to eat and sleep. I ask you, then, is it not little wonder that so many men and women have lost contact with themselves? That so many have been reduced to a life of barren practicality and drab objectivity? That so many have become disillusioned cynics?

These are troublesome times, indeed, and future years are hardly anything but bleak. The Age of Anxiety shall endure forever unless we can effect a profound change in our outlook on life. Our destiny rests in our hands. Are we to gyrate forever at our present breakneck tempo? Or are we going to slow down sufficiently, at least, to locate our place in the universe? This is truly a significant decision and not one to be made casually.

Enormous educational advances have been made in America during recent decades, and enormous advances are yet to be made. Tremendous forces are in bitter conflict throughout the world, and their struggle is most clearly reflected in the educational institutions. The uncertainty of our future has produced in us a peculiar tendency for regimentation. We seem to find security in conformity. We become timid followers, imitators without strength or character. History has shown that regimentation is rarely conducive to constructive creativity. Thus, the modern educator is confronted by a very thorny problem. He

* André Rosowsky was born in Lille, France, in March, 1936. His father was a scientist. André had his initial education in French schools. In 1942, when France was overrun by Hitler's forces, André's father and mother were taken prisoner, and have not been heard from since. André escaped with friends and resided in Southern France under an assumed name until the liberation of Paris. In 1946, he came to the United States to reside with an aunt and uncle in Beverly Hills, California. In a period of nine months he had mastered the English language and was perfectly adjusted to the American public schools. He received honorable mention in the Westinghouse National Science competition, and graduated in June, 1953, thirteenth in a class of 254. He plans to study biochemistry at the University of Californin at Berkeley.—Kenneth L. Peters (Alpha Epsilon 1099 and Epsilon Field), Principal, Beverly Hills High School.

must devise a new formula. Creative fulfillment, not regimented mediocrity, is the supreme achievement of our lives.

In years ahead, we must stress with ever greater emphasis the importance of the creative process in every phase of our studies—in the execution of a scientific experiment, in the solution of a mathematical problem, in the preparation of a research paper in history, in the writing of an English essay, and even in the practice of a physical sport. We must stress the creative power of *subjective* thinking, a sadly neglected medium of expression. We must encourage independent thought and individual research. We must nurture the creative urge! We must maintain a human rather than a mechanical atmosphere in the classroom. The art of instruction should consist of more than the mere dissemination of factual knowledge. The teacher must instill in his pupil a humanistic disposition toward learning—a humble and tolerant dedication to the search for truth. All of us, teachers and students alike, must realize our own insignificance in the face of the vast natural phenomena of which we are daily spectators. The educated man is he who is soberly conscious of his ignorance. Unfortunately our ignorance is exceeded only by our vanity; therefore we must be taught humility.

The completion of our high-school education should not mark the end of our moral improvement. We must strive to attain those qualities which we still lack. We must not fear introspection; instead, we must pause and examine ourselves and our environment. We must not suppress our need for self-expression. The compulsion and the ability to create are man's noblest assets. We must avoid gilded superficiality and search instead for simple beauty—beauty that springs not from the mind but from the soul. Depth of understanding, not rebellion, is the true source of creativity. We must avoid extremism of any sort, whether it be reactionary or radical politics, whether it be intellectual regimentation or intellectual chaos. We must banish bigotry and dogmatism from our minds. We must rid ourselves of pettiness and narrow motives. We must not lower our splendid ideals; rather, we must set for ourselves ever higher moral and aesthetic standards. We must never sacrifice the vibrant sensitivity of our youth for frigid rationalism. We must not allow our natural imagination, our youthful curiosity, our artistic exuberance, and the intensity of our feelings to be stifled by the routine of daily existence. Those traits, retained through adult life, can be the mark of greatness.

We cannot know what lies before us. We are but a speck in a vast and orderly universe, a particle in time and space. But however small we are, our universe would not exist if we did not exist, that is the essence of our philosophy! Therefore, let us rejoice, for we are individuals, each one of us a complete entity!

PATRIOTISM IS NOT ENOUGH

Freedom is the opportunity and the ability to make choices in significant life situations; but how can one make significant choices if he is not conscious of a wide range of options and alternatives? Besides, in the America of today there are those so frightened by the world crisis that they are literally afraid to exercise choices, and there are Americans ready to suppress them if they exercise choices which deviate from current stereotypes. Our growing regimentation, then, comes in part from without, but it comes in larger part from within, from our intellectual meagerness and inadequacy as individuals.

One line of attack comes from the superpatriots. Now patriotism, the love of one's own country, is among the noblest sentiments animating mankind. But there are other noble human values besides patriotism—affection for religion and family; respect for other nations, cultures, races, creeds, and classes; appreciation of individual creativity and of individual freedom. Authority and freedom must be balanced; an exaggeration of authority leads to tyranny, an exaggeration of freedom leads to chaos and anarchy.

Inscribed on the London statue of Edith Cavell, heroic English nurse executed by the Germans in Belgium during the First World War, is the wise quotation: "Patriotism is not enough." It is never sufficient, certainly not enough today.—Wm. G. Carleton.

Is Your Magazine Missing?

An estimated 1,000 members of Phi Delta Kappa in good standing did not receive the October issue of the PHI DELTA KAPPAN because of their failure to supply a correct mailing address. Under present postal regulations, magazines are not forwarded—nor are they returned to the publisher. *They are destroyed!* The address label is removed and sent to the Homewood office, or to Fulton, Missouri, so that a second issue does not follow the way of the first.

Do you want your magazine in an unbroken series? Many members do. If so, please keep a correct address on file in the Homewood office of Phi Delta Kappa at all times. Back issues are not available in sufficient numbers to duplicate the mailing. Only a few copies are available for purchase.

Keeping Abreast in Education

Φ There need be no such thing as a frustrated school teacher, Dr. William C. Menninger, noted psychiatrist from Topeka, Kansas, reports in the September *NEA Journal*. The article asserts that school teachers can live full, happy lives through understanding themselves and their problems, and by being willing to do something about solving the latter. To be mentally healthy, and to help children attain good mental health, Dr. Menninger advises teachers to get full and real satisfaction from life. Satisfactions come from filling personal needs in a constructive way.

Φ Four hundred educators from 50 free nations of the world are spread across the United States to study and observe American education and American life. The visitors, experienced leaders in teaching or administrative fields in their own countries, are spending six months in the United States under this program, co-sponsored by the Department of State and the Office of Education. The cooperating institutions are: The Universities of Cincinnati, Florida, Illinois, Kentucky, Michigan, Minnesota, North Carolina, Ohio State, Utah, Wisconsin, Oregon State College, Syracuse, Southwest Texas State Teachers College, State College of Washington, Wayne University, and Iowa State Teachers College.

Φ "The whole South is far readier for integration than any except a very few suspect," declares Mrs. Sarah Patton Boyle, prominent Virginia socialite and research writer of Charlottesville, Virginia. Mrs. Boyle is the wife of Roger Boyle, dramatics professor at the University of Virginia, a second cousin of the late General George Patton, and a great-granddaughter of John Mercer Patton, one-time governor of Virginia.

Φ Arthur S. Hill, former chief of the Section of Exceptional Children and Youth of the U. S. Office of Education and past president of the International Council for Exceptional Children, assumed his new duties as educational director of United Cerebral Palsy on October 1. In his new capacity, Mr. Hill will help to work out a national program of improving methods of educating cerebral palsied children, and of training teachers in the special skills required for such education.

Φ The University of Southern California offers an "Introduction to Shakespeare" for full academic credit over KNXT in Los Angeles this fall. The course will be given for 45 minutes on Saturday mornings with the final examination on the campus at the close of the semester. The program will be recorded on Kinescope for future use by educational television stations.

Φ Dr. Kenneth Christiansen, of Stephens College, has been appointed to direct a two-year, South-wide educational television project for the Southern Regional Education Board. The project is financed with

THE EDUCATIONAL CALENDAR

1953 MEETINGS

International Council for Exceptional Children, NEA, Portland, Ore., November 1-4, 1953.

American Education Week, November 8-14, 1953.

National Society for Crippled Children and Adults, Chicago, November 12-14, 1953.

National Conference on Driver Education, NEA Commission on Safety Education, East Lansing, Mich., November 15-18, 1953.

Northwest Conference on Administrative Leadership Serving Community Schools, American Association of School Administrators, and NEA Department of Rural Education, Spokane, November 22-24, 1953.

American Vocational Association, 47th Annual Convention, Chicago, November 23-28, 1953.

National Council for the Social Studies, NEA, Buffalo, November 26-28, 1953.

Annual Mid-Winter Conference, National Science Teachers Association, NEA, Boston, Mass., December 27-30, 1953.

Annual Convention, Speech Association of America, NEA, New York City, December 28-30, 1953.

Fourteenth Christmas Meeting, National Council of Teachers of Mathematics, NEA, Los Angeles, December 28-30, 1953.

1954 MEETINGS

American Association of Colleges for Teacher Education, NEA, Chicago, February 11-13, 1954.

Department of Elementary School Principals, NEA, Atlantic City, N. J., February 11-13, 1954.

American Association of School Administrators, NEA, Atlantic City, February 13-18, 1954.

Department of Rural Education, NEA, Atlantic City, N. J., February 15-18, 1953.

National Association of Secondary-School Principals, NEA, Milwaukee, February 20-24, 1954.

Department of Audio-Visual Instruction, NEA, Chicago, March 2-5, 1954.

National Conference on Higher Education, Association for Higher Education, NEA, Chicago, March 4-6, 1954.

Association for Supervision and Curriculum Development, NEA, Los Angeles, March 7-12, 1954.

Music Educators National Conference, NEA, Chicago, March 26-31, 1954.

The National Association for Research in Science Teaching, 27th Annual Meeting, Hotel Sherman, Chicago, March 29-31, 1954.

funds made available by the Joint Committee on Educational Television from a grant made by the Fund for Adult Education.

Φ In September the University of Houston was still the only educational non-commercial station on the air, though the Allen Hancock Foundation, Los Angeles, and the St. Louis Educational Television Commission had permission to broadcast on a test pattern. The total number of construction permits for stations to be operated on channels reserved for education was 20 out of the 47 applications previously filed.

Φ Nathan Marsh Pusey was installed on Tuesday, October 13, as the new president of Harvard University. The ceremony followed the simple ritual which placed in office the early presidents of Harvard in pre-Revolutionary times. The return to this simple, ancient custom was made with the installation of James Bryant Conant as president in 1933. In keeping with the simplicity of the affair, the installation was held in the Faculty Room of University Hall before a group of about 200 persons. During the past century, Harvard inaugurations became increasingly large and costly affairs, and in 1909 the installation of A. Lawrence Lowell took place in Harvard Yard before an audience of 13,000 people, with representatives from institutions in every part of the world.

Φ When South Korea's first school of public health opened its doors for the first time October 1, the small class of South Korean doctors began their studies from an emergency library rushed from Boston and the Harvard School of Public Health. More than 300 public health and preventive medicine texts and reference books were collected in three weeks and presented at a special ceremony to Mr. Pyo Wook Han, Counselor of the Korean Embassy, and sent by air to Korea.

Φ Dr. Harry K. Newburn, president of the Educational Television and Radio Center, sustained a serious knee injury late in June. Professor Robert B. Hudson, on loan from the University of Illinois, is acting as Dr. Newburn's special representative and is in charge of program plans. Lyle M. Nelson, formerly director of Public Services at the University of Oregon has been appointed Assistant to the President of the Center, to set up the office in Ann Arbor, Michigan.

Φ With the admission of Benjamin Kelly and the Misses Anna Laura Owens and Mary Simpson, the San Angelo Junior College this week became the fourth of 33 publicly supported junior colleges in Texas to open its doors to Negro applicants. In the three state junior colleges to which Negro students have previously been admitted there have been no untoward incidents. Negro students have been welcomed warmly as a part of the college community.

Φ George Kerry Smith, director of the Reports and Publications Division of the U. S. Office of Education, has been named executive secretary of the Association for Higher Education, a department of the NEA. He succeeds Francis H. Horn, who had served as executive secretary of the Association since October, 1951. Dr. Horn recently accepted the presidency of Pratt Institute, Brooklyn, New York.

Φ West Virginians await the United States Supreme Court decisions in the pending school segregation cases with "a wise calmness" according to Charles A. Williamson, president of the state board of education, as reported by staff writer Harry W. Ernst in *The Charleston Gazette*. Other leaders in the state, both Negro and white, are reported as unworried by the possibility of a change in the present pattern of segregated education. State institutions of higher learning, West Virginia University and Marshall College, have voluntarily admitted Negro graduate and professional students. Two private colleges, West Virginia Wesleyan and Bethany College, have likewise opened their doors to Negroes.

Φ A revolutionary method of determining the components of chemical compounds has been developed by Sister Miriam Michael, O. P., professor of chemistry at Siena Heights College, Adrian, Michigan. Sister Miriam's discussion of this new process at a University of Notre Dame lecture series earlier this year stimulated much research at that university. The method employs various types of light waves which are passed through a disc formed of the compound to be analyzed. The spectra then indicate which light waves are passed through and which are blocked, thus giving a "fingerprint" of the compound.

Φ The National Council of Teachers of Mathematics has made a $1,000 Research Award available to a doctoral candidate or an individual carrying on independent research in the field of mathematics. The purpose of the Award, according to M. H. Ahrendt, executive secretary of the Council, is to encourage research studies in learning problems in the field of mathematics, including arithmetic. Entries must be submitted prior to January 1, 1955.

Φ Frank L. Sievers has been appointed executive secretary of the American Personnel and Guidance Association. He will be the first executive secretary of the Association, which was formed in 1952 by the unification of the American College Personnel Association, National Association of Guidance Supervisors and Counselor Trainers, National Vocational Guidance Association, and Student Personnel Association for Teacher Education. Since that time operations of the Association have been conducted by an acting executive secretary and its elective officers.

Φ Often there is no room for the aging parent or other relative in the modern apartments and small-

er homes of our time. Yet the proportion of persons over 65 is rapidly growing. When houses and families were larger and there was more rural living, and less movement from place to place, more of the aged had rooms of their own and could retain privacy without getting in the way of the younger generations. But with more cramped quarters, smaller families, packaged and canned foods and household appliances, there is often little for the older relative to do to keep busy and useful if he is retired and unemployed. This was one of the problems discussed at the Iowa Conference on Gerontology, held in Iowa City, October 12-13.

Φ Directors and officers of the National School Boards Association and presidents and executive secretaries of 46 state associations will meet in Evansville, Indiana, on November 13-15. About 100 persons are expected to attend. Dr. Maurice Stapley, assistant dean of the Indiana University School of Education, and executive secretary of the Indiana School Boards Association, will be coordinator of the conference.

Φ For libraries which do much buying abroad, news of the passing of the Customs Simplification Act is good. Valuation limit for informal entry on incoming shipments goes up from $100 to $250, and there are several simplifications in procedure. The new act went into effect on September 8.

Φ In 1953, more than 3,000 students applied for admission to the University of Massachusetts, Amherst, and about 1,200 were admitted. Approximately two out of three were turned away. Provost J. Paul Mather estimates that by 1965 eight out of nine applicants will be turned away unless a long range development program is started now to meet the future needs of the Commonwealth.

Φ Dr. Franklin Dunham, a director of the Joint Committee on Educational Television, says closed-circuit broadcasts will give schools a chance to experiment with TV before seeking a station of their own. They also can be used to train students in TV operations, at a cost of about $25,000 to set up closed-circuit telecasting. This figure is "way under" the cost of constructing a TV station. All equipment is usable in regular station telecasting. Closed-circuit telecasts are piped by wire from the studio to classrooms or other locations and are not received by general TV audiences. No permit from the FCC is required to conduct them. Nearly twenty colleges, universities, medical and other schools now make closed-circuit telecasts and the idea is spreading. Most use the TV programs for classroom teaching.

Φ Recent reports show that admissions in colleges of medicine increased from 5,600 to 7,400 during 1947-52. Similarly, colleges of dentistry expanded from 2,000 to 3,000 in the number of new students admitted per year. However, the ratio of applications to admissions was still 9 to 1 in colleges of medicine and 5 to 1 in colleges of dentistry in 1952.

Φ American teachers have contributed over $70,000 to the NEA Overseas Teacher Fund for Korea, enough to provide a new suit for one in five of Korea's 70,000 teachers. Final promotion of the Overseas Teacher Fund is now under way.

Φ A Municipal Civil Service Commission of the City of New York announces the holding of a competitive examination for the filling of vacancies in the position of examiner, board of education. This is a key position in the New York City educational system. The Board of Examiners, consisting of eight Examiners and the Superintendent of Schools, is charged within broad limits with recruiting teachers, supervisors and administrators for the New York City educational system. The salary of the position is $14,300 a year. Application forms and further information may be obtained by writing to the Municipal Civil Service Commission, 299 Broadway, New York 7, New York. Applications may be filed by mail from September 1, 1953, to November 16, 1953.

Φ The Air Force order compelling Air Force ROTC senior cadets to sign up for flying training, and dropping from the program senior cadets who cannot meet physical requirements for pilot training, has been rescinded. Senior cadets may continue under formal contract with the understanding that some may receive a "Certificate of Completion" in lieu of a Commission, depending upon active duty needs of the Air Force at the time of their graduation from college. Those not commissioned may enlist in the Air Force (Grade E-2), or revert to their status under Selective Service.

The Army also plans to call to active duty, for a two-year period, those ROTC graduates not commissioned. After two years' enlisted service these will be commissioned in the Army Reserve, presumably upon discharge from active service.

Φ The School of Education staff, University of Wisconsin, is facing a new problem this fall: how to deal with students from many lands, eager to learn everything about America in three months. There are 26 educators from around the globe enrolled in a special program in secondary education sponsored by the U. S. Office of Education in cooperation with the U. S. Department of State. These men and women want to try everything in sight, according to the program coordinators. They have enrolled heavily in audio-visual, guidance and administration courses because these are completely new to most of them. They are so anxious not to miss any of the wonders here that they run the risk of scheduling themselves out of time to eat and sleep.

Φ More than two and one-half times as many South Dakota rural schools tuned in radio programs to

supplement the teachers' efforts this past year than the year before. Three hundred ninety-three rural schools listened to the University broadcasts during the school year, 1952-53, as compared with 148 rural schools listening to them the year before. Rural school pupils listening to the programs last year numbered 4,817 as compared with 1,900 the previous year. Radio programs are especially popular among rural schools where teachers are expected to cover a much wider variety of subject matter than in towns where special teachers help in such classes as music or science. The most efficient way yet devised for bringing competent special teachers into rural school rooms is by means of radio.

Φ Appointment of Dr. Ralph J. Bunche as a visiting lecturer in the School of Business and Public Administration at Cornell was announced late in September. The director of the United Nations Department of Trusteeship will give several lectures during the year. His subject is international administration.

Φ The "human relations" approach to industrial safety continues to be effective by utilizing the newer discoveries in industrial psychology. It is still making headway in eliminating human accident factors: inadequate instruction, poor supervision, fatigue, boredom, carelessness, poor discipline. The worker is taught not only how to do a job in a safe manner, but also to *desire* to perform the act in the manner known to be safe.

Φ The University of Texas is offering this fall major study in professional geography. The program will prepare students for full-time technical careers as geographers for map makers, publishers, the Armed Forces, and certain government agencies. The department will continue to offer a major in cultural geography designed to aid students preparing for business, and for government careers involving international relations.

Φ When he retired September 1 from a teaching career that began 53 years ago, Dr. Walter A. Zaugg became director of alumni affairs at Bowling Green State University, where he has taught the past 30 years. He is also chairman and professor of education, and the officially designated university orator. When he was 17 years old, Dr. Zaugg (Alpha 132 and Alpha Nu F.) began teaching in a rural school for $20 a month.

Φ The International Friendship League has hundreds of thousands of teacher-sponsored letters from boys and girls in all countries of the free world. These boys and girls, in nearly every case, have written in English, and they are all eager to have pen friends in the United States. The International Friendship League has the endorsement of the Department of State, the NEA, and the U. S. Office of Education. It is also sponsored by the Ministries of Education in all the free countries of the world.

Send a self-addressed, stamped envelope to the International Friendship League, Inc., 40 Mt. Vernon Street, Boston, Massachusetts for information.

Φ Audiences totaling ten million persons, an average daily audience of 27,400, saw educational films from the Audio-Visual Aids Service of the University of Illinois in 1952. The circulation was 60 per cent above that of the preceding year. While the bulk of circulation was to schools in Illinois, films also went to every state, to Cuba, Nigeria, The Philippines, West Indies, Switzerland, Canada, and Mexico.

Φ Nervous and mental illnesses are public health problem No. 1, Dr. Kenneth Appel, professor of psychiatry of the University of Pennsylvania medical school and president of the American Psychiatric association, told fellow psychiatrists recently. More money is needed for research and treatment of these illnesses. One state hospital has been able to discharge about 75 per cent of all admissions under 60 years of age. A study in Boston proves that if $50,000 were spent, $300,000 would be saved in the cost of care, he said.

Will Award 700 Science Fellowships

Φ More than 700 students with special abilities in science will be selected for a year of graduate scientific study during the academic year 1954-55 in the National Science Foundation's Third Annual Graduate Fellowship Program. The closing dates for receipt of applications are December 15, 1953, for postdoctoral applicants, and January 4, 1954, for graduate students working toward advanced degrees in science. The selections will be announced on or before April 1, 1954. National Science Foundation fellowships are awarded to American citizens who will begin or continue their studies at the graduate level in the mathematical, physical, biological, medical, and engineering sciences during the 1954-55 academic year.

Selections will be made solely on the basis of ability. A total of 624 selections were made from slightly less than 3,000 applicants in 1952-53, the first year of the Foundation's fellowship program. Last year 557 selections were made out of 3,300 applicants. Also, 1,274 individuals were named on an Honorable Mention List, which was made available to deans of graduate schools.

National Science Foundation graduate Fellows may attend any accredited nonprofit institution of higher education in the United States or similar institutions abroad.

Applications for the 1954-55 National Science Foundation Fellowship Program may be obtained from the Fellowship Office, National Research Council, Washington 25, D. C.

Φ With more than twenty years of experience in developing general education, and in recognition of the successes and failures of "The Hutchins Plan,"

the University of Chicago is now undertaking to relate undergraduate study to the high school work which precedes it and to the specialized study which follows. The curricula approved by the faculty to achieve these purposes include:

1. Programs for a combination of general and specialized education, normally requiring four years for completion *after* high-school graduation.

2. Continuation of the present program of the College in general education, with an added year of tutorial study.

3. A Master's degree to be awarded approximately one year after completion of undergraduate study, instead of three years as at present.

Φ This year, for the first time, Kentucky's six state institutions of higher learning – the University of Kentucky, Eastern, Western, Morehead, Murray, and Kentucky State colleges – are uniting to present their needs to the people of the commonwealth. Copies of a bulletin outlining requirements of the state schools were distributed in October by the Kentucky Council on Public Higher Education.

Federal Research Costs to Drop

Φ Both commitments and expenditures of Federal agencies for scientific research and development are expected to drop in fiscal year 1954 from the record totals established in previous years, according to the latest estimates compiled by the National Science Foundation. Estimates of obligations for research and development are $2,074 million for 1954 compared to $2,187 million for 1953; expenditures are estimated at $2,187 million in 1954 and $2,205 million in 1953. Since the lag between obligations and expenditures has averaged about 9 months over the past several years, the decline in obligations for 1954 will presumably be reflected in a further decrease in expenditures in fiscal 1955. Department of Defense estimates constitute the largest portion of the totals for both obligations and expenditures. Present figures indicate that in fiscal year 1954 the Department may obligate $1,556 million, including a carry-over of $142 million from previous years.

Φ An Institute for Psychological Research will be established at the University of Texas under plans approved by the Board of Regents. The Institute is expected to centralize and coordinate use of existing psychology research funds and to facilitate procurement of new funds for basic research. It will constitute an organized research unit which State agencies or private enterprise may call upon for psychological service.

Φ The American Educational Research Association has modified its program of triennial issues of the *Review of Educational Research*. The modification eliminates the issue involving the teaching of science and mathematics. The National Association for Research in Science Teaching, The National Council of Mathematics Teachers, with the cooperation of the Office of Education, and the American Association for the Advancement of Science will in the future prepare research reviews in these areas and will publish them through their regular journals, namely, *Science Education* and *The Mathematics Teacher*. The first issue for science will be published in 1954.

Φ Without fanfare, except the popping of a couple of photoflash bulbs, L. E. Akeley started his sixty-seventh year of teaching at the University of South Dakota, this fall. He was 92 years old last February 22. Dean Akeley has four university degrees in science and is the man who trained the remarkable scientific talent of Ernest O. Lawrence, often recognized as the "father of atomic research." Dean Akeley lectures in the philosophy of science, and his classes the last two semesters have been the largest he has had.

Φ Unesco has been forced to defer action indefinitely on 32 requests for technical assistance from the world's underdeveloped regions, according to Luther H. Evans, Unesco's director-general. Requests for aid in education and science received this year by Unesco from 44 countries would require $5,200,000 to fulfill. The United Nations agency was allocated $2,650,000 to carry out its technical assistance program. Two hundred and fifty-eight experts have been sent out in the fields of education and science, and 267 fellowships have been awarded to nationals of countries assisted.

Best Educated Man in Community

Φ The University of Minnesota and the FBI have joined forces to establish a cooperative police training program intended to raise the professional status and competence of the state's peace officers. Under this program, police schools sponsored by the FBI in cities throughout the state will have University recognition. A committee of University staff members has revised the course material offered in these schools to conform to University standards. The program is described as another step toward elevating police work to the status of a profession, with the aim of making the trained police officer "the best educated man in his community."

Service Qualification Tests

Major General Lewis B. Hershey, Director of Selective Service, has announced that the Selective Service College Qualification Tests will be given at more than 900 testing centers on Thursday, November 19, 1953, and Thursday, April 22, 1954.

To be eligible to apply for the Selective Service tests a student must: (1) intend to request deferment as a student; (2) be satisfactorily pursuing a full-time course of instruction; and (3) must not previously have taken the qualification test.

The present criteria for deferment as an undergraduate student are either a satisfactory score (70)

on the qualification test or specified rank among the male members of the class (upper half of freshman class, upper two thirds of sophomore class, or upper three fourths of junior class).

General Hershey has emphasized many times that these criteria are merely flexible yard sticks and it is not mandatory for local boards to follow them. The standards may be raised or lowered any time in accordance with manpower demands.

Applications for the November 19, 1953 tests must be postmarked no later than midnight Monday, November 2, 1953. Applications postmarked after midnight of that date cannot be accepted for that test.

Φ Students enrolled in the six state teachers' colleges in New Jersey are far above average, according to Dr. E. DeAlton Partridge, president of Montclair (N. J.) State Teachers College. Fifty per cent of the seniors at Montclair ranked in the upper quarter of the 6,000 students who took the National Teacher Examinations this spring.

Φ The Association of American Geographers has adopted a resolution to encourage further the Department of Health, Education, and Welfare and the appropriate non-governmental agencies to call the serious gap in geography education to the attention of the NEA, state educational associations, school boards, parents, and educators generally.

Φ Lyman Bryson, professor emeritus of Teachers College, Columbia University, and moderator of CBS radio programs, "The People's Platform," and "Invitation to Learning," and of the television program, "Lamp Unto My Feet," has been selected as the first lecturer of the Fund for Adult Education's recently established Lectureship. This year the lectures will be under the auspices of the University of Wisconsin where, 50 years ago, the administration of Charles R. Van Hise introduced to American higher education the concept that a public university should make its resources and skills available to all the people of the state in their everyday living.

Φ Headquarters of the newly established Interamerican Foundation for Postgraduate Medical Education have been opened at 112 E. Chestnut Street, Chicago, with Dr. Alberto Chattes as Executive Director. Eminent men representing medicine, surgery, research, medical education, and business firms with interests in Latin America, compose the Board of Directors and the Advisory Board of the Foundation, whose purpose is to bring to the United States from Latin America qualified persons with demonstrated ability in their chosen fields of medicine or medical research, to pursue postgraduate studies.

Φ Indiana University School of Education, and faculty member N. A. Fattu have received renewal grants of $52,000 from the United States Air Force for research on testing the aptitudes of radio and radar mechanics. Professor Fattu also has received $25,000 from the office of Naval research for the testing and training of persons with substandard education. The total of other research grants recently announced by Indiana University amounts to $283,582.

Φ Nineteen West German elementary and kindergarten teachers are on the University of Cincinnati campus under the Educational Exchange Program. Seventeen high-school teachers from Germany are on the University of Kentucky campus and will remain through February 1 to observe college life. The visiting educators are housed in private homes during their stay. These nine women and eight men, all mature persons with years of teaching experience, have delighted faculty and staff members with their direct method of inquiry into American ways. Questions most frequently asked run something like this: What are these "old folks homes" we hear about in America and why do you put somebody's grandparents in such institutions? How do you bury your dead? What sort of funeral and marriage ceremonies do you have in America? What are your Negro schools like, and do all your teachers have real freedom in the classroom?

M.A.T. — a New Degree

Φ Duke University has established a new graduate degree for school teachers and for future teachers. A Master of Arts in Teaching will be available to high-school and grade-school teachers who want a professional degree with an academic major and to liberal arts graduates who plan to teach. The new degree also will permit graduates of liberal arts colleges with little or no previous professional training to work simultaneously toward a teaching certificate and a graduate degree.

Requirements for the degree may be satisfied in two ways:

1. A student may major in education courses, taking 18 to 24 semester hours in education and six to 12 hours in non-education work, or,

2. He may major in non-education courses, taking 18 to 24 hours in non-education and six to 12 hours in education.

In both programs a minimum of 30 semester hours is required. The non-education work must be taken in one or more of the subjects taught at the secondary school level.

Φ The Defense Department has modified a clause which led some universities to refuse to renew contracts for carrying on U. S. Armed Forces Institute work, because of possible encroachment upon their rights to "academic freedom." The offending clause has been amended to include a final phrase "for security reasons," and now reads as follows: "The contractor will not employ or retain for the performance of services under this contract such persons as are disproved by the government *for security reasons.*"

FRATERNITY DIRECTORY

Campus Chapters

Chapter	Location	Secretary	Mailing Address
Alpha	Indiana Univ.	Raymond S. Butler	c/o Mrs. Carol L. Schaerer, 1106 S. Washington, Bloomington, Ind.
Beta	Columbia Univ.	Richard Bergmann	Box 611, 535 W. 120th St., New York 27, N. Y.
Gamma	Univ. of Missouri	J. O. Keller	101 Rothwell Gym., Univ. of Mo., Columbia, Mo.
Delta	Stanford Univ.	Gerald W. Brown	408-8 Village, Stanford, Calif.
Epsilon	St. Univ. of Iowa	Desmond L. Cook	179 Riverside Park, Iowa City, Iowa
Zeta	Univ. of Chicago	Tobias Enverga	1414 E. 59th St., Chicago 37, Ill.
Eta	Univ. of Minnesota	Harold G. J. Gerrits	211 Burton Hall, Univ. of Minn., Minneapolis 14, Minn.
Theta	Cornell Univ.	Orville E. Thompson	Stone Hall, Cornell Univ., Ithaca, N. Y.
Iota	Harvard Univ.	Wendell French	Lawrence Hall, One Kirkland St., Cambridge 38, Mass.
Kappa	Univ. of Kansas	William Butler	120 Fraser Hall, Univ. of Kans., Lawrence, Kans.
Lambda	Univ. of California	Robert J. Griffin	Haviland Hall, Univ. of Calif., Berkeley 4, Calif.
Mu	Univ. of Texas	John A. Cook	116 Sutton Hall, Univ. of Texas, Auston, Tex.
Nu	Univ. of Washington	Francis F. Powers	230 Education Hall, Univ. of Wash., Seattle 5, Wash.
Xi	Univ. of Pittsburgh	Paul L. Varnum	1655 Memorial Dr., Pittsburgh 16, Pa.
Omicron	Univ. of Nebraska	W. C. Meierhenry	305 Tchrs. Col., Univ. of Nebr., Lincoln 8, Nebr.
Pi	Univ. of Illinois	Lloyd E. McCleary	109 Univ. H. S., Univ. of Ill., Urbana, Ill.
Rho	New York Univ.	Joseph Grimes, Jr.	One Stevenson Rd., Hewlett, L. I., N. Y.
Sigma	Ohio State Univ.	Stephen M. Clarke	120 Arps Hall, Ohio St. Univ., Columbus 10, Ohio
Tau	Univ. of Pennsylvania	Daniel S. Jacoby	2302 Tilden St., Philadelphia 29, Pa.
Upsilon	Northwestern Univ.	Joseph D. Boyd	526 Greenwood, Evanston, Ill.
Phi	Univ. of Wisconsin	Robert L. Mooren	Box 50, Ed. Bldg., Univ. of Wis., Madison 6, Wis.
Chi	Univ. of Oregon	Douglas J. Adams	2773 Kincaid, Eugene, Ore.
Psi	Peabody Col. for Tchrs.	Gilbert M. Wilson	Box 212, Peabody Col., Nashville 5, Tenn.
Omega	Univ. of Michigan	John B. Hawley	4203 Univ. H. S., Univ. of Mich., Ann Arbor, Mich.
Alpha Alpha	Univ. of Oklahoma	F. Lowell Jackson	Fac. Exch., Univ. of Okla., Norman, Okla.
Alpha Beta	Univ. of Virginia	Frank E. Flora	Peabody Hall, Univ. of Va., Charlottesville, Va.
Alpha Gamma	St. Col. of Washington	Clarence D. Kron	Sch. of Ed., St. Col. of Wash., Pullman, Wash.
Alpha Delta	Kansas St. Col. of Agri.	D. F. Showalter	Dept. of Ed., Kans. St. Col., Manhattan, Kans.
Alpha Epsilon	Univ. of So. Calif.	Francis Laufenberg	Box 160, Univ. of So. Calif., Los Angeles 7, Calif.
Alpha Zeta	Univ. of Arizona	George W. Baker	1228 N. Fourth Ave., Tucson, Ariz.
Alpha Eta	Temple Univ.	Mario DaRos	Box 141, Temple Univ., Philadelphia 22, Pa.
Alpha Theta	Univ. of North Dakota	Carl Peterson	505 Maple Ave., Grand Forks, N. D.
Alpha Iota	Univ. of Cincinnati	Omer W. Renfrow	850 Ludlow Ave., Cincinnati 20, Ohio
Alpha Kappa	Univ. of Tennessee	E. E. Lowry	Box 8300, Univ. of Tenn., Knoxville, Tenn.
Alpha Lambda	Boston Univ.	Joseph Comerford	332 Bay State Rd., Boston 15, Mass.
Alpha Mu	Colorado St. Col. of Ed.	W. L. Knies	Colo. St. Col. of Ed., Greeley, Colo.
Alpha Nu	Univ. of Kentucky	James Graham	Col. of Ed., Univ. of Ky., Lexington, Ky.
Alpha Xi	Univ. of Alabama	James E. Wheeler	P. O. Box 123, University, Ala.
Alpha Omicron	Claremont Col.	Edward W. Malan	118 Oak Park Dr., Claremont, Calif.
Alpha Pi	Rutgers Univ.	Patrick J. White	507 Alletta St., Plainfield, N. J.
Alpha Rho	Johns Hopkins Univ.	Albert H. Naeny	2008 Lydenlea Way, Baltimore 14, Md.
Alpha Sigma	Denver Univ.	George R. Villano	3071 W. Clyde Pl., Denver 11, Colo.
Alpha Tau	Pennsylvania St. Col.	Frank Anthony	230 E. Whitehall Rd., State College, Pa.
Alpha Upsilon	Univ. of Utah	E. T. Demars	2552 Alden St., Salt Lake City 5, Utah
Alpha Phi	Syracuse Univ.	Carson Graves	200 Slocum Hall, Syracuse Univ., Syracuse 10, N. Y.
Alpha Chi	Univ. of Calif. at L. A.	Alfred Quinn	c/o Dept. of Ed., UCLA, Los Angeles 24, Calif.
Alpha Psi	Univ. of Buffalo	Elton W. Peterson	160 Frankhauser Rd., Williamsville 21, N. Y.
Alpha Omega	Wayne Univ.	Elmer H. Miller	436 W. Woodland Ave., Ferndale 20, Mich.
Beta Alpha	Louisiana St. Univ.	C. L. Madden	Box 8729 L.S.U., Baton Rouge, La.
Beta Beta	North Texas St. Col.	Everett E. Jarboe	N. T. Station 5231, Denton, Texas
Beta Gamma	George Washington Univ.	Joseph B. Reid	4914 S. 29th Rd., Arlington, Va.
Beta Delta	Univ. of Colorado	William J. Walsh	Col. of Ed., Univ. of Colo., Boulder, Colo.
Beta Epsilon	Univ. of Maryland	Bernard L. H. Kramer	4511 Norfolk Ave., Baltimore 16, Md.
Beta Zeta	Oklahoma A & M Col.	Robert S. Dotson	227 Whitehurst Hall, Okla. A & M, Stillwater, Okla.
Beta Eta	Western Michigan Col.	James E. Fetterolf	Box 62, Richmond, Mich.
Beta Theta	Univ. of N. Carolina	John R. Peck	Box 1061, Chapel Hill, N. Car.
Beta Iota	Washington Univ.	Meriwether Martin	4335 Cote Brilliante, St. Louis 13, Mo.
Beta Kappa	Iowa State College	Ronald R. Easter	201 S. Hazel Ave., Ames, Iowa
Beta Lambda	Indiana St. Tchrs. Col.	Lonzo Jones	2700 N. 7th St., Terre Haute, Ind.
Beta Mu	Univ. of Wyoming	Douglas R. Johnson	Office of Registrar, Univ. of Wyo., Laramie, Wyo.
Beta Nu	Univ. of Mississippi	William M. Carter	Box 844, University, Miss.
Beta Xi	Univ. of Florida	James L. Wattenbarger	Col. of Ed., Univ. of Fla., Gainesville, Fla.
Beta Omicron	Utah St. Agri. Col.	Eldon Drake	Utah St. Agri. Col., Logan, Utah.
Beta Pi	Ball St. Tchrs. Col.	Charles Marcus	Ball St. Tchrs. Col., Muncie, Ind.
Beta Rho	Univ. of New Mexico	Hal Dobkins	Rm. 17, Hodgin Hall, Col. of Ed., Univ. of N. Mex., Albuquerque, N. Mex.
Beta Sigma	Brigham Young Univ.	Percy Burrup	Brigham Young Univ., Provo, Utah
Beta Tau	Univ. of Hawaii	Ed Ouchi	813 Kapahulu Ave., Honolulu, T. H.
Beta Upsilon	Univ. of South Dakota	Thomas R. Risk	Univ. Exch., Univ. of S. D., Vermillion, S. D.
Beta Phi	Univ. of Connecticut	Stuart H. Manning	U-56, Univ. of Conn., Storrs, Conn.
Beta Chi	Col. of the Pacific	Kenneth Stocking	1821 Princeton, Stockton, Calif.
Beta Psi	Bradley Univ.	Larry Norton	104 Heading Ct., Peoria, Ill.
Beta Omega	Univ. of Idaho	Harold J. Soeters	904 West A St., Moscow, Idaho
Gamma Alpha	Univ. of Arkansas	Bernard Hanavan	203 Louise St., Fayetteville, Ark.
Gamma Beta	Univ. of Houston	Neal Adams	Box 565, Univ. of Houston, Houston, Tex.
Gamma Gamma	Mississippi So. Col.	N. L. Landakov	Miss. So. Col., Hattiesburg, Miss.
Gamma Delta	Arizona St. Col. at Tempe	Richard P. Nortman	Rt. 1, Box 72, Tempe, Ariz.
Gamma Epsilon	San Diego St. Col.	Frank Lovsland Cole	4510 Harbinson Ave., La Mesa, Calif.
Gamma Zeta	Montana St. Univ.	Richard Keefe	1010 Cleveland, Missoula, Mont.

Field Chapters

Chapter	Location	Treasurer	Mailing Address
Alpha	San Francisco, Calif.	Arthur Lindborg	3766 21st St., San Francisco 14, Calif.
Beta	St. Louis, Mo.	H. C. Bleckschmidt	7824 Forest View Dr., St. Louis 21, Mo.
Gamma	Topeka, Kans.	Algot E. Anderson	822 Taylor St., Topeka, Kans.
Delta	Fresno, Calif.	George Warner	2515 Michigan, Fresno, Calif.
Epsilon	Los Angeles, Calif.	Edward W. Morton	3126 S. Bently Ave., Los Angeles 25, Calif.
Zeta	Detroit, Mich.	J. Edgar Bigelow	Bd. of Ed., Dearborn, Mich.
Eta	Santa Barbara, Calif.	A. A. Herman	Dist. Supt. of Schls., Nordhoff Union Elem. Schls., Ojai, Calif.
Theta	Kansas City, Mo.	Richard A. Ball	4312 W. 52 Terrace, Kansas City, Kans.
Mu	Muncie, Ind.	John Baker	Ball St. Tchrs. Col., Muncie, Ind.
Nu	Chicago, Ill.	Reino M. Takala	740 S. Madison St., Hinsdale, Ill.
Xi	Sacramento, Calif.	Fred L. Griffin	Univ. Farm, Col. of Agri., Davis, Calif.
Omicron	Kirksville, Mo.	Noah P. Richardson	St. Tchrs. Col., Kirksville, Mo.
Pi	San Antonio, Tex.	P. Y. Gilbreath	119 Hoover Ave., San Antonio, Tex.
Rho	Pittsburg, Kans.	O. F. Grubbs	901 E. Quincy, Pittsburg, Kans.
Sigma	Portland, Ore.	Miller Nicholson	2345 N. E. 26th Ave., Portland 12, Ore.
Tau	Ogden, Utah	T. O. Smith	Supt., Ogden Pub. Schls., Ogden, Utah
Upsilon	Milwaukee, Wis.	Oliver Wergin	2162 N. 53rd St., Milwaukee 3, Wis.
Phi	Tulsa, Okla.	Ted C. Andersen	1244 S. Indianapolis, Tulsa, Okla.
Psi	Omaha, Nebr.	Roy Busch	5022 Corby St., Omaha, Neb.
Omega	San Diego, Calif.	J. Edwin Eagle	4121 Fairmont, San Diego, Calif.
Alpha Alpha	Houston, Tex.	Milo E. Kearney	Univ. of Houston, Houston 4, Tex.
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Alpha Gamma	Grand Rapids, Mich.	William T. Kutsche	726 Morris Ave. S. E., Grand Rapids, Mich.
Alpha Delta	South Bend, Ind.	Duewaine Hawblitzel	420 E. Ireland Rd., South Bend, Ind.
Alpha Epsilon	Hammond, Ind.	Frank S. Albright	717 Buchanan, Gary, Ind.
Alpha Zeta	Evansville, Ind.	Albert Longbrake	3310 E. Chandler Ave., Evansville 14, Ind.
Alpha Eta	Indianapolis, Ind.	Paul L. Carmichael	525 N. Riley, Indianapolis, Ind.
Alpha Theta	Bloomington, Ill.	Lewis Toll	Illinois St. Normal Univ., Normal, Ill.
Alpha Iota	Jackson, Miss.	Howard J. Cleland	Bailey Jr. H. S., Jackson, Miss.
Alpha Kappa	Appleton, Wis.	Edward Ehlert	1115 N. 18th St., Manitowoc, Wis.
Alpha Lambda	Fort Wayne, Ind.	Richard H. Shriner	3124 S. Harrison St., Fort Wayne, Ind.
Alpha Mu	Lafayette, Ind.	Leonard Smith	224 Northwestern Ave., W. Lafayette, Ind.
Alpha Nu	Toledo, Ohio	Daniel J. Crowley	311 N. Prospect St., Bowling Green, Ohio
Alpha Xi	Des Moines, Ia.	W. C. Findley	629 Third St., Des Moines 9, Ia.
Alpha Omicron	Charleston, Ill.	H. J. Arnold	Eastern Ill. St. Col., Charleston, Ill.
Alpha Pi	Macomb, Ill.	Ogden L. Glasgow	316 W. Washington, Macomb, Ill.
Alpha Rho	Bakersfield, Calif.	Gerald Hedden	4519 Randy Ave., Bakersfield, Calif.
Alpha Sigma	Phoenix, Ariz.	Cecil McGirr	Rt. 1, Box 7, Scottsdale, Ariz.
Alpha Tau	Salem, Ore.	James Curtin	Henry Hill Sch., Independence, Ore.
Alpha Upsilon	Cape Girardeau, Mo.	Burwell Fox	Southeast Mo. St. Col., Cape Girardeau, Mo.
Alpha Phi	Cedar Falls, Ia.	Herbert Silvey	Bur. of Res., Ia. St. Tchrs. Col., Cedar Falls, Ia.
Alpha Chi	Santa Ana, Calif.	Joseph Hamblet	521 Riverside Ave., Newport Beach, Calif.
Alpha Psi	Utica, N. Y.	Roy L. Mitchell	1613 St. Jane Ave., Utica, N. Y.
Alpha Omega	San Jose, Calif.	William Rogers	c/o San Jose St. Col., San Jose, Calif.
Beta Alpha	Mobile, Ala.	R. L. Booker	1153 Gorgas St., Mobile, Ala.
Beta Beta	Springfield, Mo.	A. J. McDonald	935 S. Delaware St., Springfield, Mo.
Beta Gamma	San Luis Obispo, Calif.	A. G. Wilson	1348 Higuera St., San Luis Obispo, Calif.
Beta Delta	Pasadena, Calif.	Harley Lyon	95 N. Sierra Bonita Ave., Pasadena 4, Calif.
Beta Epsilon	Spokane, Wash.	Clarence Miller	Lewis & Clark H. S., Spokane, Wash.
Beta Zeta	Chico, Calif.	Joseph L. Slack	Chico St. Col., Chico, Calif.
Beta Eta	Garden City, N. Y.	Robert C. Stevenson	30 Surrey Dr., Merrick, N. Y.
Beta Theta	Tulare, Calif.	Ken Meeks	2020 N. Douty, Hanford, Calif.
Beta Iota	Ashland, Ore.	DeVere O. Taylor	1011 Winchester Ave., Medford, Ore.
Beta Kappa	Long Beach, Calif.	Bruce E. Strem	222 W. Gardner, Long Beach 5, Calif.
Beta Lambda	Lafayette, La.	George M. Armstrong, Jr.	110 Crestmont St., Lafayette, La.
Beta Mu	St. Cloud, Minn.	Ronald Riggs	St. Tchrs. Col., St. Cloud, Minn.
Beta Nu	Edinboro, Pa.	Walter A. Jameson	3728 French St., Erie, Pa.
Beta Xi	Redlands, Calif.	Eli R. Steed	400 E. Frederick St., Barstow, Calif.

District Organization

DISTRICT I

Representative: Victor N. Phelps, 2345 Harrison St., Milwaukie, Ore.

Coordinators: Homer Boroughs, Jr., 230 Education Hall, Univ. of Wash., Seattle 5, Wash.; Alvin V. Miller, So. Oregon Col., Ashland, Ore.

DISTRICT II

Representative: John C. Whinnery, 824 N. Greenwood Ave., Montebello, Calif.

Coordinators: Arthur E. Arnesen, 440 E. First South St., Salt Lake City 2, Utah; W. M. Gates, Phoenix Union H. S., Phoenix, Ariz.; Verne Hall, Jr., 825 Canada Rd., Woodside, Calif.; Arthur T. Tait, 3745 Lankershim Blvd., Los Angeles 28, Calif.

DISTRICT III

Representative: Ernest M. Andersen, Kans. St. Tchrs. Col., Pittsburg, Kans.

Coordinators: Ernest E. Bayles, Dept. of Ed., Univ. of Kans., Lawrence, Kans.; Clifford S. Blackburn, Supt. of Schools, North Little Rock, Ark.; M. R. Chauncey, Okla. A & M Col., Stillwater, Okla.; Paul Kantz, Texas Educational Agency, Austin, Tex.; Robert E. Strickler, 3638 Halliday, St. Louis 16, Mo.

DISTRICT IV

Representative: Maynard R. Bemis, Col. of Ed., Univ. of Wyo., Laramie, Wyo.

Coordinators: F. R. Adams, St. Dept. of Ed., St. Paul 1, Minn.; J. Leonard Davies, Col. of Ed., Univ. of Iowa, Iowa City, Ia.; Russell E. Jones, Black Hills Tchrs. Col., Spearfish, S. D.; Herbert A. Smith, Tchrs. Col., Univ. of Nebr., Lincoln 8, Nebr.

DISTRICT V

Representative: J. Roy Leevy, Purdue Univ., Lafayette, Ind.

Coordinators: Edward C. Cieslak, 15414 Greenlawn, Detroit 21, Mich.; E. O. May, 28 E. Jackson Blvd., Chicago 4, Ill.; Russel S. Merkel, 521 S. Sherman Dr., Indianapolis, Ind.; Richard A. Siggelkow, 220 N. Murray St., Madison, Wis.; Walter Lough, Dept. of Ed., Bowling Green St. Univ., Bowling Green, Ohio

DISTRICT VI

Representative: Earle O. Liggitt, Supt. of Schools, Munhall, Pa.

Coordinators: Ernest R. Caverly, Supt. of Schools, Brockton, Mass.; Carolus T. Clark, 226 Mountain Ave., Westfield, N. J.; Donald C. Hennick, 4328 Rowalt Dr., College Park, Md.; Robert O. Shaffer, N. Y. St. Col. for Tchrs., Oswego, N. Y.; W. Clinton Stuart, 75 Sylvan Place, Valley Stream, L. I., N. Y.

DISTRICT VII

Representative: Charles R. Foster, Dir. of Grad. Studies in Ed., Univ. of Fla., Gainesville, Fla.

Coordinators: Rex L. Burrow, Rosedale, Miss.; John A. Deese, Col. of Ed., Univ. of Ga., Athens, Ga.; Robert M. Fink, 410 North St., Chapel Hill, N. C.; Henry Goff, A. S. Rhodes Mem. School, Riverton, Va.; Clifton Hall, George Peabody Col. for Tchrs., Nashville 5, Tenn.; W. A. Lawrence, Louisiana St. Univ., Baton Rouge, La.; Leslie Martin, Univ. of Ky., Lexington, Ky.; Vincent McGuire, Col. of Ed., Univ. of Fla., Gainesville, Fla.; Gladstone Yeuell, Univ. of Ala., University, Ala.